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KINGSTON-WOLFE ISLAND-CAPE VINCENT INTERNATIONAL BRIDGE CROSSING

ECONOMIC IMPACT STUDY

REPORT OF INTERDEPARTMENTAL TASK FORCE

April, 1969.

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INTRODUCTION

This study was requested by the Hon. Charles MacNaughton, Treasurer of Ontario and Minister of Economics, in May 1968 following the presentation of a feasibility study conducted by the engineering consulting firm of De Leuw Cather and Company. The De Leuw Cather study concluded that no international bridge crossing could be built and maintained between Kingston, Ontario and Cape Vincent, New York State without strong financial support from various governments or public agencies. None of the alternative bridge crossings examined by the consultant was found to be commercially self-supporting.

As the Treasurer pointed out ......

> "The Government recognizes that there are additional aspects of feasibility which should be investigated and reviewed before any decision is reached. These include the broader economic and social benefits which might be derived from such a crossing, as well as the specific consideration of transportation facilities for the permanent and summertime residents of Wolfe Island and the general area".(1)

An Interdepartmental Task Force was formed to consider these broader issues under the following terms of reference:

1) (a) to examine the geographic areas of economic impact for all of the alternative crossings

   (b) to examine the magnitude of economic benefits (and their distribution) that will occur, because of various levels of service alternatives that could be provided, to the users of the proposed bridge facilities and to the local and regional economy in general

   (c) to examine the expected level of benefits (and their distribution) arising from alternative methods, i.e., other than bridge crossings, of satisfying the projected demand

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(1) From a Statement by the Honourable Charles MacNaughton, Treasurer of Ontario, concerning the feasibility study of an international crossing of the St. Lawrence River from Kingston, Ontario, to Cape Vincent, New York, Friday, May 3, 1968.

2) to examine the costs associated with the various alternative methods of satisfying anticipated demands, and to examine the reasonableness of the various proposed toll structures and the expected distribution of costs among users and governments

3) to examine the degree of expected involvement (financial) of participating jurisdictions (i.e., Province of Ontario, Federal Government of Canada, State of New York and Federal Government of U.S.A.).

In assessing the economic impact of the proposed bridge construction it was necessary to look beyond the financial implications of the costs and revenues attached to the bridge.

A commercial approach to the feasibility of this project makes the implicit assumption that all the costs of the project will be borne by the bridge authority and that all of the benefits can be captured by the same authority. If this were the case, the toll structure would reflect the level of benefits and their distribution in the community and a financial feasibility study would be the final criteria upon which to evaluate the project.

However, because of the fact that certain benefits are captured by the community at large, a financial feasibility study cannot be the final criterion. A consideration of the magnitude and distribution of the economic benefits must be carried out to determine the final impact of the proposed project.

The Task Force in its study was unable to produce a completely quantitative assessment of the level of benefits and had to content itself with indicating the possible direction, magnitude and distribution of economic benefits. Our examination of both the geographical and sectorial distribution of possible benefits is presented below. The Task Force has been careful throughout the study to ensure that derived assessments represent the net

addition of benefits to the community and region and not merely a transfer of benefits from one area to another.

The first section of the report defines the areas of economic impact. Two regions are defined, each with its specific characteristics and each reflecting a level of benefits derived from the proposed bridge. The local area encompassing the urban regions of Kingston and Watertown is expected to reap the major portion of any benefits. The much larger area encompassing much of southeastern Ontario and Upperstate New York is expected to be the recipient of any secondary benefits from the proposed bridge. This section of the report also outlines the expected traffic volumes for the base year of 1968.

As outlined above,this report seeks to identify the benefits in each economic sector resulting from the construction of the proposed bridge; thus the next three sections of the report deal with housing and residential development, agriculture, industrial development,and tourism and recreation. The analysis of the above sectors showed that little, if any,benefits could be expected as a result of the proposed bridge construction; the exception being tourism and recreation. This section of the report attempts to show the importance of each activity in the total economic fabric of the Kingston area. It also investigates the importance of each of these sectors in adjacent areas of New York State and indicates their dependence on or independence from the Canadian mainland or Wolfe Island. The only sector that exhibits any degree of interdependence is that of tourism and recreation and it is suggested that this sector will not be greatly influenced by marginal improvements in access routes.

The final sections of the report deal with the cost of the proposed bridge and alternative methods of service and the demand for access to Wolfe Island. It was found that the major benefits to be derived from improved access to Wolfe Island would be gained by the local communities and that these benefits would be concentrated in the agricultural and tourist industries. It is concluded that some improvement of access to Wolfe Island is economically feasible; however, this does not include the construction of an international bridge at a cost of $30 - 35 million. A much lower level of expenditure can produce a higher proportionate level of benefits and therefore represent a more viable economic proposition.

AREA OF ECONOMIC IMPACT

(a) Present travel patterns

Transportation facilities such as highways, railway, subways, and bridges have a number of common characteristics. All transportation facilities exist in a spatial environment and the characteristics of the spatial environment and the inter-action among the sectors of this environment will in a large measure determine the economic profile of the transportation facility.

The success of any transportation facility will depend on the availability and geographic location of trip generators. People do not usually seek mobility for its own sake but for some specific purpose: i.e., (1) journey to work, (2) shopping, (3) recreation and tourism, (4) other services, (5) commercial trips.

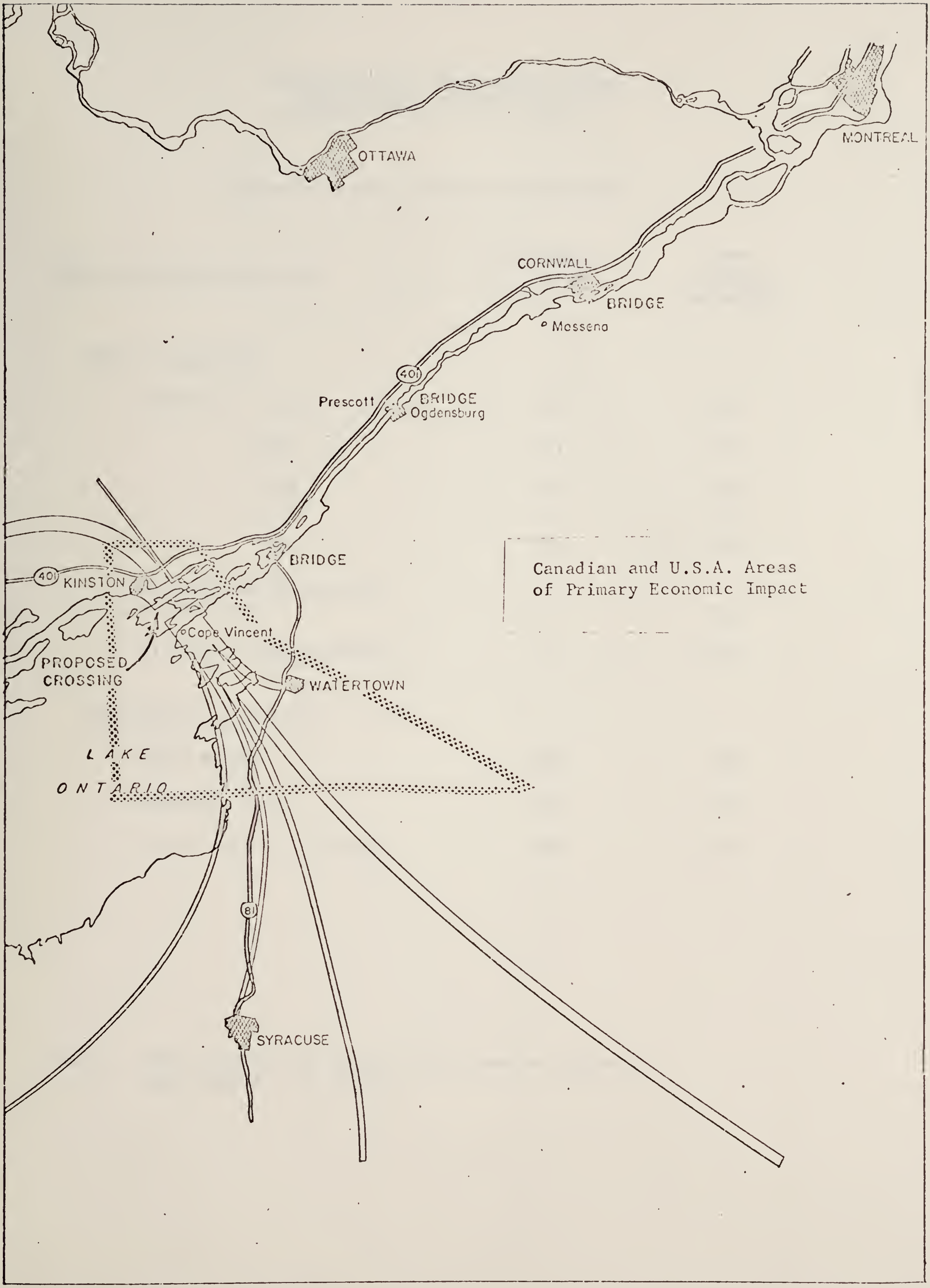
Each end purpose has a value to individuals or groups of individuals. The value of the trip can roughly be approximated by the combination of time and distance costs that people are willing to pay for the travel. The time cost spent in accomplishing any specific journey has a definite value to individuals and firms. That value is measured in the opportunity costs of alternative uses of time and money to accomplish the same end or purpose.

The longer the time distance of a total trip, the less significant will be a small change in altering public travel habits. Thus, a 20-minute reduction in a six-hour journey will not have the same significance as would a 20-minute reduction in a journey with a total travel time of 40 minutes. It is also true that the effects on the relocation or restructuring of economic activity will be quite different. A 20-minute saving in a six-hour journey will be unlikely to alter many existing trips, shopping trips and recreation trips. (While commercial freight costs may

be lowered somewhat by such a change; a freight rate reduction for the shorter journey will be much more significant.)

The economic significance of any transportation facility will diminish as activities become further separated from that facility in spatial terms. For this reason, the Task Force has selected two regions for study of the effects of the proposed Kingston-Wolfe Island-Cape Vincent International Bridge. The first region is that small area where the effects of both time and distance reductions over present levels of service would be significant to mobility patterns and to economic activity. The second, and much larger area, is that area where the direct economic effects are smaller. This larger area is the area where any secondary effects of increased economic activity in the local area are likely to be manifested. The first region is shown on the attached map and its relative importance can be seen in the following table which shows the current trip generation of the major region. The first, or major region, can be further sub-divided into two areas: (i) the Kingston municipal area including Wolfe Island and (ii) the Watertown-Cape Vincent region.

The area of major economic impact, as determined by the Highways Department 1965 Origin and Destination Data, generates 70 per cent of the southbound trips and 60 per cent of the northbound trips. The balance of the trips fall in the second and larger region - trips generated from Toronto and points west of Kingston, all other Ontario points and all other U.S.A. points. This is the area where an upgraded or new transportation facility will have less significance in trip generation because of lower relative time and distance savings.



Canadian and U.S.A. Areas of Primary Economic Impact

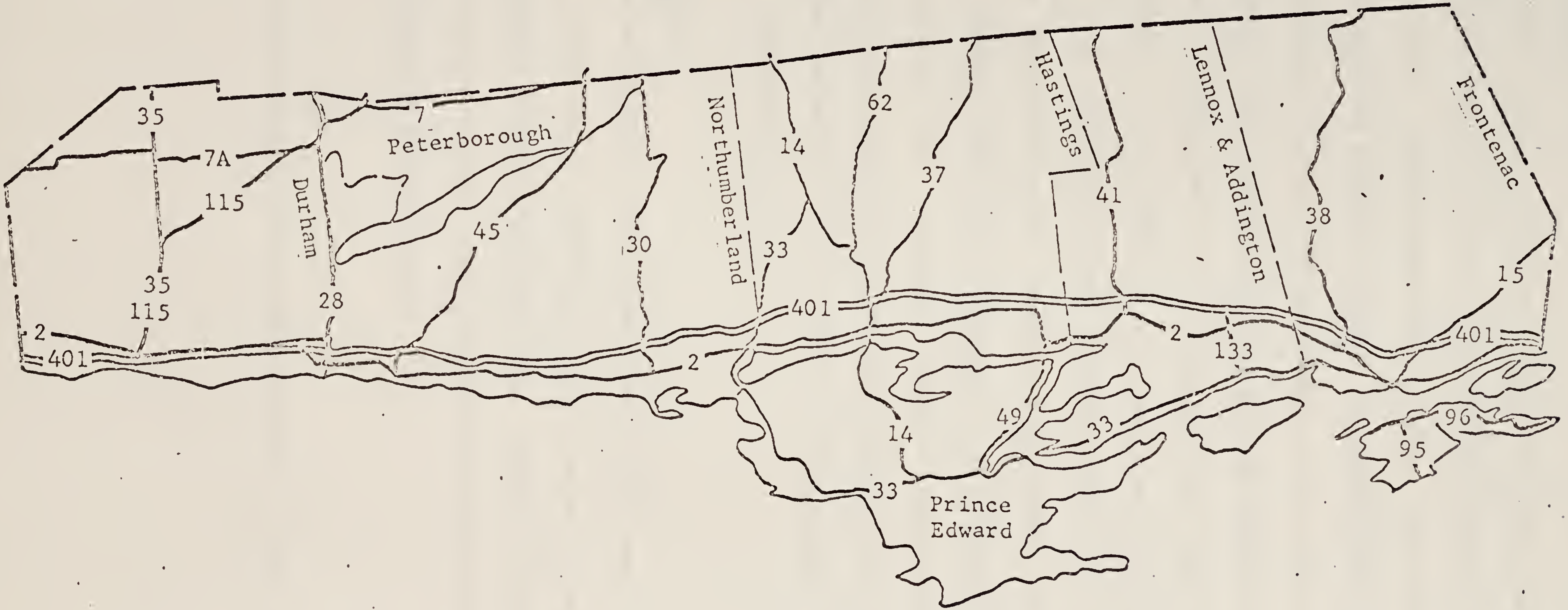
KINGSTON-WOLFE ISLAND-CAPE VINCENT INTERNATIONAL BRIDGE STUDY

Estimated Summer Weekday Distribution

Trip Distribution by Area	Percentage of Trips	Cumulative Percentage
Ontario Mainland		
Kingston - C.B.D.	43	43
- East	11	54
- West	16	70
Total	70	70
Toronto and Points West of Kingston	13	83
All Other Ontario Points	17	100
Wolfe Island and U.S.A.		
Wolfe Island	38	38
Watertown Area	22	60
All Other U.S.A. Points	40	100

Source: Data Supplied by Ontario Department of Highways
from 1965 O. & D. Survey

Canadian Area of
Secondary Economic Impact



(b) New trip generation

With the advent of the proposed international bridge crossing, the absolute time saving between the current route and the proposed route will be constant for all trips. It is evident that some new trips will be generated because of time and distance savings. Presumably these new or induced trips were previous marginal and sub-marginal trips where the value to the traveller did not equate to his cost in terms of time and distance. As indicated earlier, the improvement in time and distance costs will become less and less significant as the origin or destination moves farther in space from the location of the new transportation facility. Thus, the largest percentage of new or induced trips will occur in local traffic from Wolfe Island to and from Kingston. New trip generation in 1970 should be: (i) U.S.-Canada, both ways, 45%; (ii) Wolfe Island, both ways, 55%. It appears that induced traffic patterns will be very similar to the present traffic pattern. Thus the major economic effects of the proposed bridge will occur within a rather limited area.

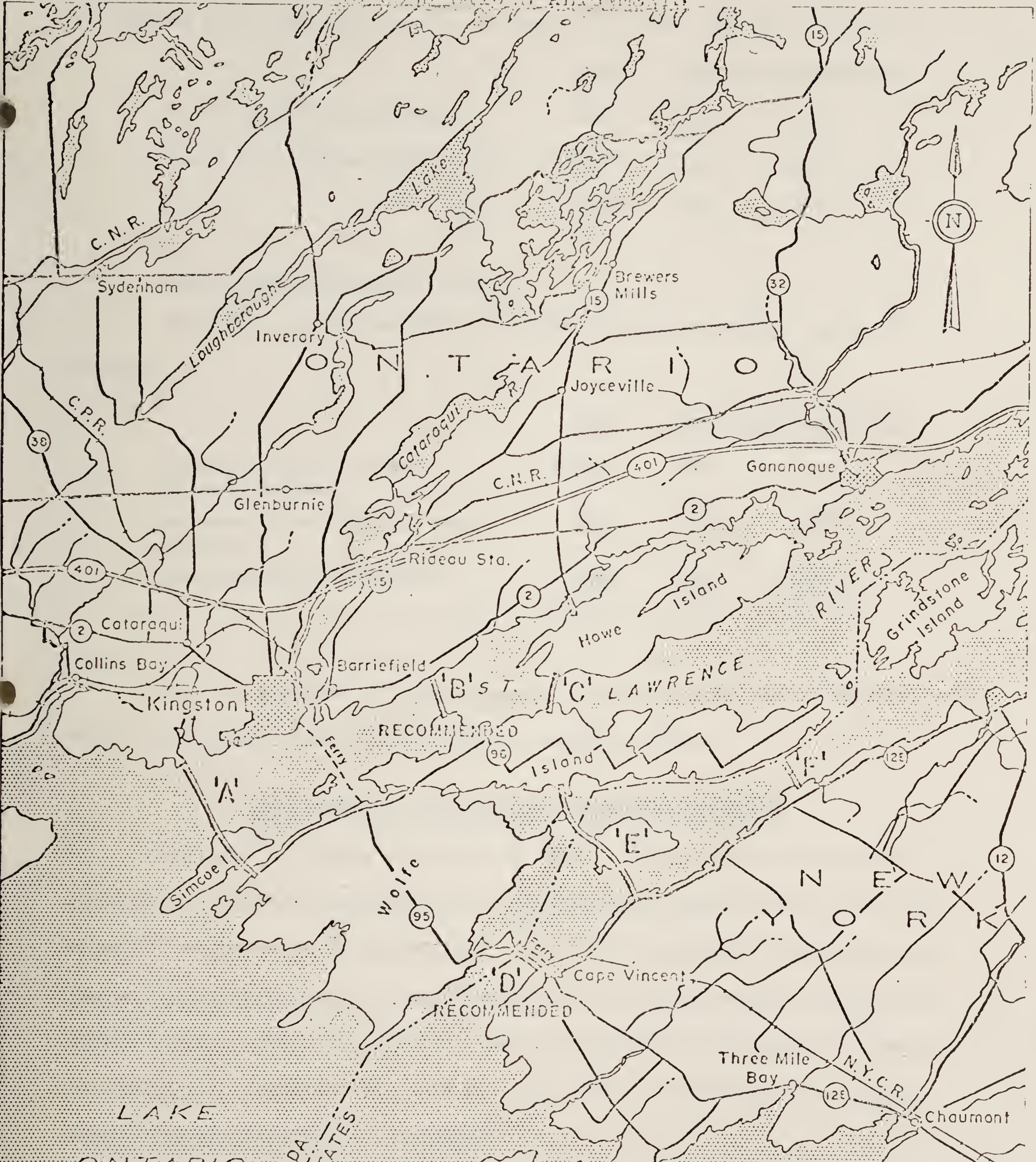
(c) Predicted traffic

If the proposed facilities were constructed in the near future, we may expect a maximum diversion of 1,000 vehicles per day on the annual average from the Thousand Islands Bridge to the new route. However, these are not new trips into the Kingston area but simply those that would benefit in terms of travel time by taking the proposed route.

New trips

The expected new trip generation resulting from a bridge crossing

PROPOSED BRIDGE ALIGNMENTS



as opposed to a ferry service for the year 1970, say, may be as follows:

	High	Low	Most Reasonable
U.S. - Canada (both ways)	400	100	250
Local to and from Wolfe Island	500	100	300
Total	900	200	550

Total predicted traffic 1970

Therefore, predicted 1970 Annual Average Daily Traffic may be as follows:

	High	Low	Most Reasonable
Diverted from Thousand Islands Bridge	1,000	500	800
Diverted from Existing Ferry Service	500	400	450
New Generation (as above)	900	200	550
Total	2,400	1,100	1,800

For the purposes of this survey the areas outlined on the previous map will be considered the area of primary economic impact.

FUNCTIONS OF THE PROPOSED INTERNATIONAL BRIDGE

In order to assess the economic impact of the proposed bridge the functional relationships between the transportation facility and the various economic sectors must be established. It will be necessary to examine each sector to determine present characteristics, possibilities for growth, and future needs. Once these factors have been identified, then each sector can be analyzed to determine the need for, and effect of, the proposed bridge within the geographic area as defined.

Within the primary area of influence, the major effects of the proposed bridge will be due to increased economic and social activity between Wolfe Island (and/or Howe Island) and Kingston, Cape Vincent and Kingston, and Watertown and Kingston. It should be kept in mind that, with the exception of the Wolfe Island-Kingston center link, the existence of the Canadian-U.S.A. international border will eliminate many of the shopping and recreation trips normally expected between cities whose relative size is similar to Kingston, Cape Vincent and Watertown. Thus as was described in the study performed by De Leuw Cather, the major influence in the primary area will come from the proposed link between Kingston and Wolfe Island. The activity sectors in this primary region most likely to be affected by the proposed bridge are:

1) housing and residential development;
2) industrial and commercial;
3) agriculture;
4) tourism and recreation.

Each of these will be dealt with in the following.

HOUSING AND RESIDENTIAL DEVELOPMENT

Within the primary area the major population centers are the cities of Kingston and Watertown including their respective suburbs. As has occurred throughout North America, both of these centers have experienced a continual immigration from the rural areas within the last two decades. The urban population has increased as a per cent of the total population as outlined below:

FRONTENAC COUNTY-KINGSTON URBAN AREA

	Total Population of County	Urban Population	Per Cent Urban Population
1966	97,138	71,540	73.6
1961	87,534	63,419	72.4
1951	66,099	41,104	62.2
1941	53,717	34,168	63.6

The above figures are also reflected in the decline in farm population shown later.

JEFFERSON COUNTY-WATERTOWN URBAN AREA

	Total Population of County	Urban Population	Per Cent Urban Population
1960	87,835	33,306	37.9
1950	85,521	34,350	40.2
1940	84,009	33,382	39.7

It can be easily established from the above data that the Kingston urban area is by far the most influential population center within the primary area of the proposed bridge's influence. Watertown and Jefferson County have experienced very marginal population growth rates since 1940, in fact,the population of Watertown has actually declined since 1940.

Kingston, on the other hand, has become an even more influential regional center due to the increasing rate of urbanization within Frontenac County. In 1966 the Kingston urban area comprised 73.6 per cent of the total population of Frontenac County and the population of Kingston has more than doubled since 1940. This growth rate creates a significant

demand for housing facilities and public services including sewage, water and road services.

The population forecasts for the City of Kingston are variable depending upon the planning density that is accepted by the local council; however, the best estimate of the population of the city itself in the year 1985 is approximately 74,000. This does not include the population of Kingston or Pittsburgh Townships. The 1966 population for each of these areas was:

Kingston City	59,004
Kingston Township	12,985
Pittsburgh Township	10,210.

Thus it can be seen that within the city boundaries there is an expected growth of 15,000 people by 1985. It would be reasonable to assume that the two suburban townships will increase in similar fashion. This assumption, however, is only warranted if the land in such townships is available and capable of servicing.

Given the expected population growth rate for the Kingston area and therefore the need for residential land and facilities, the important question from an expenditure policy viewpoint is, which parcels of residential land currently available can be developed to provide the minimum total cost residential area consistent with the quality of housing desired? Given this question, there are three alternative areas where residential expansion can take place. These are:

1) Wolfe Island;
2) Kingston Township;
3) Pittsburgh Township.

It should be noted that only if Wolfe Island is selected as a minimum cost development location will the proposed bridge have a significant effect on the cost or supply of residential dwellings in the Kingston area. It is an exercise in circular logic if one suggests that the development of a residential community on Wolfe Island will support and therefore prove the feasibility of the proposed bridge - unless such a development is of lower cost than the alternative locations. If an alternative location will provide equal quality housing at a lower total cost, then the higher cost Wolfe Island development should not be undertaken and in such a case the estimated benefits and number of bridge crossings attributed to the prospective residential development should not be included in the justification of the bridge.

The administrative boundaries of the City are purely arbitrary and it is obvious that further expansion will have to move outside of this boundary. The expansion can be expected to be primarily to the west. To the east, there is limited access and also extensive Department of National Defence holdings which would inhibit growth for a period of time. To the north, there is some difficulty in servicing due to shallow soil cover, together with the limited access created by the barrier of the 401 Highway.

The growth to the west is a result of a number of factors. Community facilities such as major shopping centres and schools are already located to the west of the existing city. These facilities will attract further development and road access is good.

The Township of Kingston can expect to adequately take an expansion of 12,000 by 1990. To the west of Kingston the area is already served with

municipal water mains from Point Pleasant Plant and there is a main along Bath Road which extends west of Days Road through undeveloped land to the Hillview area, a 12 inch main on Gardner Road connecting Highway 33 to Highway 2, and a main on Highway 2. There are three municipal water supply systems in the township which are intended eventually to interconnect.

The Ontario Water Resources Commission operates a sewage treatment plant for the township. Located on Lake Ontario its present capacity is capable of serving a population of approximately 10,000 persons and this can be expanded to treat sewage effluent created by 20,000 persons. An important factor in development is that the existing soil conditions are not suitable for septic tank drainage and for this reason urban development will be serviced only by sanitary sewers (which is, of course, desirable in any case).

If the area were to develop in a reasonable urban manner, allowing for a variety of densities, it should be possible to accommodate aproximately 30,000 people in the township to the west of the city and south of 401.

From the above, it is evident that the City of Kingston and the Township of Kingston, to the west, has an advantage over Wolfe Island which does not have any of these services. In addition, the Township of Kingston is far closer to the urban area than development which would occur on Wolfe Island. At the present time this Island has no main services and no access; there is no real comparison between its development and the straight forward easily developed flat land to the west of Kingston. It is presumed that a number of people would wish to live on the Island and also there would be a demand for a number of commercial and tourist facilities on the Island. However, regardless of this demand, it would still be necessary

to provide main services on Wolfe Island and these services are already available to Kingston and its surrounding area.

Canadian Urban Economics Ltd. agreed with the above when they suggested in their study for De Leuw Cather that,

> "The general availability of land throughout the Kingston area, the lack of a significant differential in land prices, and the lack of scenic attractions on Wolfe Island limit the potential for development of residential facilities inland on Wolfe Island."

AGRICULTURE

Much of the land surface that is encompassed within the two areas previously outlined as those areas where the economic impact of the proposed international bridge will fall is currently engaged in agricultural activities. This is particularly true for the larger of the two areas. For the purposes of this survey, the agricultural sector will fall into three geographic categories. These are:

(1) Wolfe Island,

(2) Northern New York State, i.e., Jefferson County and St. Lawrence County,

(3) that portion of Southeastern Ontario bordered by the eastern border of Frontenac County, Highway Number 7, the eastern border of Durham County.

Wolfe Island

One of the major functions of the proposed bridge will be to connect Wolfe Island to both the Canadian and the U.S.A. mainlands. It is conceivable then that such connections may have an impact on the agricultural production on the Island. Farming is one of the major factors in the economy of Wolfe Island as the following table shows:

Year	Wolfe Is. Population	Wolfe Island Farm Population	Percentage Farm Pop. of Total Pop.
1951	1,102	717	65.1
1961	1,169	693	59.3
1966	1,168	655	56.1

The table also indicates that the farm population has been declining both as a percentage of total population and in absolute terms. Further evidence of the decline in farm land can be observed from the following statistics taken from a report prepared by Canadian Urban Economics Limited and up-dated by Treasury.

Main Characteristics of the Agriculture of Wolfe Island

1951 and 1966*

	1951	1966	Percentage Change
No. of Farms	170	127	- 25.3
Population of Farms	717	655	- 8.7
Total Area (Acres)	29,198	28,531	- 2.3
Improved "	23,282	18,101	- 22.2
Under Crops "	16,871	12,656	- 25.0
No. of Cattle (Total)	4,214	6,472	+ 53.6
No. of Milk Cows	2,943	2,816	- 4.3
Hogs	2,206	549	- 75.1
Sheep	1,098	780	- 29.0
Hens, Chickens	3,811	1,632	- 57.2
Wheat (Acres)	253	84	- 66.9
Oats "	5,222	2,990	- 42.7
Barley "	525	158	- 70.0
Hay "	10,749	10,801	+ 0.5
Corn for Grain (Acres)	n.a.	35	-
Potatoes "	29	7	- 75.9

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* Source: DBS Census

The number of farms, the number of acres under cultivation, and the total number of farm land acres have all declined during the period 1951-1961.

A description of the land available for cultivation is taken from the above-mentioned report:

> "Farm land occupies approximately 80 per cent of all the land on the island. Of this farm land 80 per cent is classified as improved, four per cent remains wooded.

> Most of the farm land is found in the western part of the island, west of Bayfield Bay, where the soil cover is deep and fertile. The eastern arm of the island has mostly smaller farm holdings together with scattered woodlands."

The above table shows an increase of 53.6 per cent in the population of livestock between 1951 and 1966; thus both beef and dairy cattle herds are increasing. The crop production on Wolfe Island consists largely of livestock feed crops, and as the population of livestock increases it can be expected that a greater percentage of the farm acreage will be converted to this use. Canadian Urban Economics estimates that 47 per cent of the field crops are grown to feed livestock.

Upperstate New York

The trends in the agriculture sector of the economy in the Jefferson and St. Lawrence Counties of the Upper New York State region are similar to those evidenced by the Wolfe Island area. The following tables indicate the trend in both farm population as a per cent of total population and farm labour force as a percentage of total labour force. From the table on labour force composition, it can be seen that the farm labour force has declined absolutely as well as relative to the total labour force. This trend was also experienced in the Wolfe Island area.

POPULATION CHANGES
(Upper New York State)

	Total Population	Farm Population	% of Farm Population to Total Pop.
1950			
Jefferson County	85,521	13,256	15.5
St. Lawrence County	98,897	20,669	20.9
1960			
Jefferson County	87,835	10,101	11.5
St. Lawrence County	111,239	14,016	12.6
1965			
Jefferson County	89,082	8,152	9.2
St. Lawrence County	117,061	12,328	10.5

LABOUR FORCE (UPPER NEW YORK STATE)

	Total Labour Force	Farm Labour Force	Percentage Farm of Total Labour Force
1960			
Jefferson County	31,200	4,500	14.4
St. Lawrence County	50,800	8,500	16.7
1965			
Jefferson County	30,300	3,300	10.9
St. Lawrence County	48,700	6,400	13.1

Agricultural production between the years 1959 and 1964 in Upperstate New York has undergone some significant change. In both Jefferson and St. Lawrence Counties there has been a marked increase in dairy production, 11.9 and 17.4 per cent respectively. This contrasts with a marked decline in the production of the second most important farm product, i.e., other livestock. The decline over five years has been 20.5 per cent in Jefferson County and 22.8 per cent in St. Lawrence County. It is obvious that Upperstate New York (similarly with Wolfe Island) has become predominantly a dairy farming region, insofar as its agricultural production is concerned.

UPPERSTATE NEW YORK (AGRICULTURAL PRODUCTION)

Total Sales of the Two Most Important Classes of Farm Products
($000)

	Dairy Products	Other Livestock Products
1959		
Jefferson County	16,743	3,002
St. Lawrence County	17,460	3,234
1964		
Jefferson County	18,738	2,386
St. Lawrence County	20,506	2,496
Per Cent Change 1964/59		
Jefferson County	+11.9%	(-20.5%)
St. Lawrence County	+17.4%	(-22.8%)

A report on the Black River-St. Lawrence Economic Development District carried out by the Black River-St. Lawrence Economic Development Commission in 1967 states that, "farming is one of the principal economic activities" in this region. In 1964, 36.5 per cent of the land area was engaged in agricultural production.

In this region of Upperstate New York, as with the Wolfe Island area, there has been a reduction in the number of farms; i.e., from 10,670 in 1954 to 7,126 in 1964, a decrease of 33.2 per cent during the ten years. During the same period there was a reduction in farm acreage of:

1954 - farm acreage 1,950,000

1964 - farm acreage 1,600,000

or a reduction of 17.9 per cent.

The major field crops grown in this area are hay and corn primarily for livestock feeds. This follows the pattern existing in the Wolfe Island area.

The major markets for this region's agricultural production are the heavily populated metropolitan areas in the Northeastern United States. Thus, a substantial market exists for the area's production; however, due to an increase in productivity per acre the need for farm land has declined.

Southeastern Ontario

The agricultural sector in the eight-county area in southern Ontario has the same characteristics of those areas previously mentioned.

There has been significant declines in all of the indices of agricultural prosperity; i.e.,

a) declines in the quantity and value of farm production

b) declines in the amount of land area involved in agricultural production

c) declines in both the number of farms and the size of farms

d) corresponding to the decline of farms and the size of farms, there have been sizeable declines in the farm population and farm labour force.

The following series of tables indicate the above situation.

ACREAGE OF IMPROVED FARM LAND IN EASTERN ONTARIO

Co[illegible]	1941	1951	% Change 51/41	1961	% Change 61/51	1966	% Change 66/61	% Change 66/41
Hastings	288,703	264,544	- 8.4	226,496	-14.4	219,841	- 2.9	-23.9
Lanark	193,934	174,516	-10.0	164,761	- 5.6	168,523	- 2.3	-13.1
Leeds	198,794	188,070	- 5.4	169,496	- 9.9	174,768	- 3.1	-12.1
Lennox & Addington	169,849	168,155	- 1.0	154,002	- 8.4	148,987	- 3.3	-25.1
Northumberland	269,373	232,640	-13.6	227,098	- 2.4	223,754	- 1.5	-16.9
Peterborough	184,187	175,623	- 4.7	165,999	- 5.5	155,673	- 6.2	-15.5
Prince Edward	159,111	147,834	- 7.1	140,897	- 4.7	142,668	+ 1.3	- 3.5
Frontenac	188,647	166,534	-11.7	155,054	- 6.9	153,061	- 1.3	-18.9

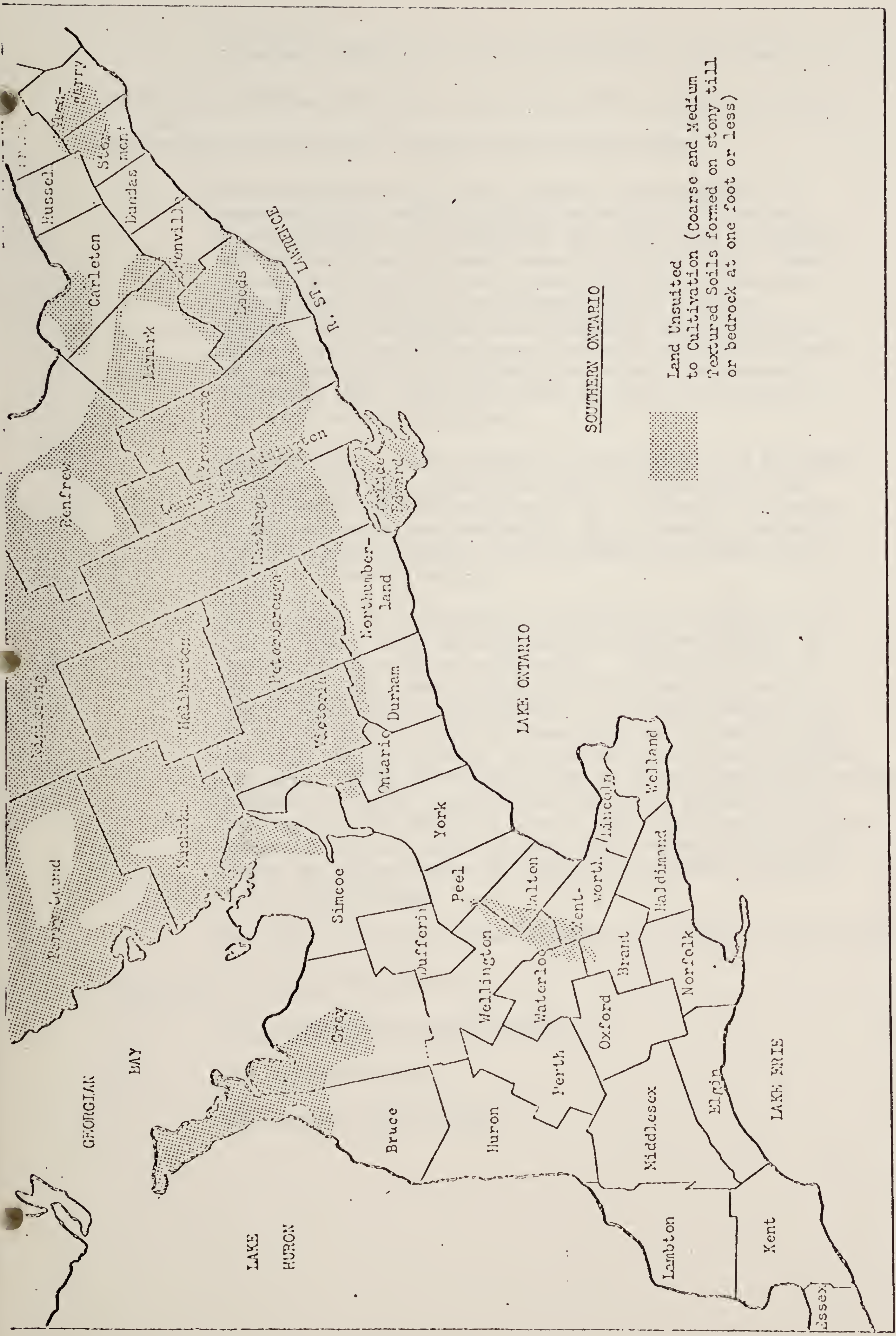
Source: Canada Census

It is our conclusion that the agricultural sector in eastern Ontario is largely composed of marginal farms and the output from such farms has been declining at a consistent rate over the last decade. In conjunction with the increase in the number of marginal farms, there has been a corresponding abandonment of the rural dwelling for the urban environment. This migration to the cities is not a phenomenon that is peculiar to Frontenac County or the region adjacent to the proposed international bridge but has occurred throughout North America. The reasons for such a movement are well known:

- high level of earnings among urban workers
- greater productivity in agricultural output requiring a smaller farm labour force
- mechanization of farm operations has caused small farms to merge with larger units to take advantage of the economies of scale.

In the Kingston-Frontenac County area, the additional handicap of poor soil and lack of suitable land for cultivation (as shown on the following map) as well as the long distance to major markets have served to accelerate this process.

The series of tables at the conclusion of this chapter suggest that the agricultural sector in eastern Ontario is largely composed of dairy farms or farms engaged in the production of livestock.



SOUTHERN ONTARIO

▨ Land Unsuited to Cultivation (Coarse and Medium Textured Soils formed on stony till or bedrock at one foot or less)

A survey conducted by William Mackenzie, Department of Economics, McMaster University, for the A.R.D.A. program indicates the economic position of eastern Ontario dairy farms.

> From the Census data, the greatest concentration of non-commercial dairy farms is to be found in Eastern Ontario where it is estimated that more than a quarter of all the farms are non-commercial dairy farms. Over three-quarters of all non-commercial farms in Eastern Ontario are likely to be shipping dairy products. Despite this concentration of marginal dairy farms in this area, these farms appear to be dominantly shippers of manufactured milk rather than cream. The Census indicates that only 11 per cent of the dairy farms in the area are cream shippers.
>
> About half the cream shippers in Ontario are to be found in Western Ontario where they make up about half the total number of milk shippers. It is likely that about a quarter of the non-commercial dairy farms in Ontario are in Western Ontario. This compares with about one-third in Eastern Ontario.
>
> The problem of non-commercial operations in Ontario is not as great as it is elsewhere in Eastern Canada. It is nevertheless quite substantial. In Table 11 it is indicated that about one-third of all dairy farms in the province are non-commercial. In round numbers, it is likely that it will be found that two-thirds of these are cream shipping farms and one-third manufactured milk shippers. Thus in this province it is estimated that subsidy payments to about one-third of the dairy producers are serving only to delay a movement out of Agriculture, or to maintain a minor operation on a non-commercial farm unit where the major source of income is from some activity other than farming.

The major markets for the agricultural output of the Kingston region and Frontenac County are:

(1) Montreal and Quebec Province,

(2) Ottawa and area,

(3) Kingston local market.

Much of the dairy and poultry production is consumed by the local market. Most of the fluid milk produced in the county is consumed within the Kingston market, as is the egg production of the three largest firms in the county, i.e., Hemco, Mitchells and Paddles.

As has been shown in earlier charts and tables, the greater portion of the agricultural output is livestock and there are little, if any, field crops produced for market. The field crops that are produced in the area are mainly for livestock feed purposes and little cash crop farming is done.

The markets for beef and hog production are found in Montreal and the Province of Quebec. The reason for this is largely due to the competition from western Canadian beef and livestock that is found in Toronto. Kingston farmers usually avoid the Toronto market and ship the livestock to Quebec feeder lots. There are three major meat packing plants in the Kingston area, i.e., Joyceville, Cataraqui and Newburg. The products of these plants are consumed largely within the local area. It is reported that some of the local drovers purchase and transport beef and dairy cattle, particularly Holsteins, to Pennsylvania and the Carolinas. The largest market for locally raised hogs outside of the Frontenanc County meat packing plants is in Hull and frequent shipments are made to this area.

The local cheese plants, of which one is on Wolfe Island, are mostly small and medium-sized producers who find markets both locally and by supplying the larger producers such as Kraft and Black Diamond in areas such as Montreal and Belleville.

Thus, it is easily seen that the advent of the proposed bridge will mean little to the agricultural sector. The only possibility for increased production would occur if larger amounts of beef and dairy cattle were to be shipped to Pennsylvania and Carolina. This prospect, however, is thought to be significantly remote even with the proposed bridge. This type of shipment is approximately a 250 to a 600-mile haul, and it is unlikely that an elimination of 20 miles or 30 minutes in such a haul will alter the price of the livestock in the southern market significantly to increase the flow of livestock south of the border.

As could be expected, St. Lawrence and Jefferson Counties exhibit approximately the same characteristics as Frontenac County and are large producers of dairy products and livestock. This fact, plus the very sparse population density and slow growth rates, indicate a very poor market potential for output of the Kingston-Frontenac County agricultural sector. Thus this sector will benefit only marginally from the proposed bridge.

TOTAL PRINCIPAL FIELD CROPS[1] ACREAGE AND FARM VALUE, 1961 AND 1967

	Acreage		Value Per Acre		Total Value	
	1961	1967	1961 $	1967 $	1961 $	1967 $
Frontenac	92,571	90,370	31.50	45.60	2,915,830	4,117,790
Hastings	148,376	147,840	37.44	50.90	5,555,275	7,526,000
Lanark	105,877	103,030	32.99	46.20	3,493,060	4,758,940
Leeds	98,406	115,610	27.83	51.80	2,738,452	5,984,300
Lennox & Addington	137,667	100,390	34.32	44.80	4,724,430	4,495,820
Northumberland	137,406	141,500	38.55	68.10	5,297,577	9,630,530
Peterborough	93,286	93,160	35.59	48.70	3,320,085	4,539,500
Prince Edward	84,801	88,270	34.81	54.30	2,951,729	4,793,600
Total	898,390	880,170	-	-	30,996,438	45,846,480

(1) In 1961 - does not include sugar beets, seeded pasture and tobacco.
In 1967 - includes winter wheat, spring wheat, all oats, barley, rye, buckwheat, flaxseed, mixed strains, dry peas, dry beans, potatoes, shelled corn, fodder corn, field roots, soybeans, hay, and tobacco. Does not include sugar beets.

Source: Canada Census

OF FARM, EASTERN ONTARIO, 1961 AND 1966

Acres 180-239 No.	 % of Total	 240-399 No.	 % of Total	 400-599 No.	 % of Total	 600-759 No.	 % of Total	 760-1,119 No.	 % of Total	 1,120-1,599 No.	 % of Total	 1,600 and Over No.	 % of Total	 Total No.	 %
480	18.4	544	20.9	207	7.9	63	2.4	20	0.8	12	0.5	2	0.1	2,603	100.0
432	19.0	469	20.6	199	8.8	62	2.7	24	1.0	14	0.6	1	0.1	2,272	100.0
292	18.0	342	21.1	133	8.2	59	3.6	30	1.9	8	0.5	2	0.1	1,618	100.0
228	16.8	300	22.1	129	9.5	60	4.4	27	2.0	11	0.8	4	0.3	1,357	100.0
369	20.0	441	24.0	239	13.0	79	4.3	40	2.2	10	0.5	1	0.1	1,840	100.0
295	17.8	419	25.3	216	13.1	82	4.9	47	2.8	9	0.5	4	0.3	1,657	100.0
361	18.6	396	20.4	106	5.5	49	2.5	14	0.7	1	0.1	-	-	1,936	100.0
304	17.1	374	21.1	114	6.4	52	2.9	24	1.4	1	0.1	-	-	1,774	100.0
232	15.0	298	19.3	88	5.7	32	2.1	18	1.2	5	0.3	2	0.1	1,548	100.0
241	17.4	272	19.6	92	6.6	34	2.5	22	1.6	5	0.4	3	0.2	1,385	100.0
380	16.7	334	14.7	64	2.8	16	0.7	7	0.3	4	0.2	-	-	2,276	100.0
339	16.4	364	17.5	80	3.9	24	1.2	5	0.2	4	0.2	-	-	2,075	100.0
312	18.8	291	17.6	93	5.6	37	2.3	17	1.0	5	0.3	-	-	1,657	100.0
275	18.3	282	18.7	74	4.9	42	2.8	13	0.9	2	0.1	1	0.1	1,504	100.0
229	17.1	182	13.6	24	1.8	5	0.3	-	-	1	0.1	1	0.1	1,337	100.0
203	16.6	185	15.2	46	3.8	11	0.9	4	0.3	-	-	2	0.1	1,229	100.0
2,655	17.9	2,828	19.1	954	6.4	340	2.3	146	1.0	46	0.3	8	0.1	14,915	100.0
2,317	17.5	2,665	20.1	950	7.2	367	2.8	166	1.2	46	0.3	15	0.1	13,244	100.0

AGRICULTURAL PRODUCTION FRONTENAC COUNTY, BY TOWNSHIP, 1966

Township	Cattle	Pigs	Sheep	Horses	Poultry	Acres in Field Crops
Barrie	113	37	12	10	206	259
Bedford	2,668	354	39	94	1,544	4,693
Clarendon	433	56	266	32	638	1,021
Hinchinbrooke	2,310	397	161	96	864	3,962
Howe Island	1,157	-	716	38	269	3,623
Kennebec	406	41	57	34	246	433
Kingston	4,708	927	286	181	38,634	10,858
Loughborough	2,863	626	436	87	1,855	7,894
Olden	1,377	93	41	56	705	1,325
Oso	828	101	73	41	412	1,512
Palmerston	442	19	-	38	90	864
Pittsburgh	7,610	792	281	157	23,569	15,926
Portland	5,339	1,042	409	137	5,154	13,574
Storrington	5,372	743	422	98	1,762	12,462
Wolfe Island	6,472	549	780	107	1,632	15,219

MAIN CHARACTERISTICS OF THE AGRICULTURE OF THE AREA DIRECTLY AFFECTED BY THE PROPOSED BRIDGE, 1966

	Wolfe Island	Kingston	Pittsburgh	Elizabeth Township	Escott	Leeds Front of	Yonge Front of	Total	Percentage Change 1951 to 1966
No. of Farms	127	174	187	323	103	198	198	1,310	-26.4
Population on Farms	655	813	176	1,406	912	1,074	450	5,486	-32.7
Total Area (Acres)	28,531	31,843	45,773	58,207	19,548	50,129	21,609	255,640	16.8
Improved (Acres)	18,101	18,116	28,476	31,891	10,561	31,432	8,839	147,416	37.3
Under Crops (Acres)	12,656	11,186	16,318	21,891	5,739	20,772	6,505	95,067	11.6
No. of Cattle (Total)	6,472	4,708	7,610	7,657	2,676	8,646	2,799	40,368	3.2
No. of Milk Cows	2,816	1,586	3,310	3,718	1,286	4,250	1,231	18,201	-36.7
No. of Hogs	549	927	792	2,646	313	990	491	6,708	-25.4
No. of Sheep	780	286	281	1,327	141	125	30	2,970	-14.3
No. of Hens, Chickens	1,632	38,634	23,569	218,111	1,861	2,934	1,616	288,357	454.5
Wheat (Acres)	84	143	64	154	-	35	66	546	-55.4
Oats (Acres)	2,990	2,336	3,220	4,932	909	3,086	1,136	18,609	-28.6
Barley (Acres)	158	153	102	255	-	137	55	860	- 4.1
Hay (Acres)	10,801	7,452	11,222	12,036	4,562	7,357	4,939	58,369	1.1
Corn for Grain (Acres)	35	238	30	469	30	19	29	850	-
Potatoes (Acres)	7	30	13	99	13	29	13	204	-60.8

MAIN CHARACTERISTICS OF THE AGRICULTURE OF THE AREA DIRECTLY AFFECTED BY THE PROPOSED BRIDGE, 1951

	Wolfe Island	Kingston	Pittsburgh	Elizabeth Township	Escott	Leeds Front of	Yonge Front of	Total
No. of Farms	170	294	269	412	124	350	161	1,780
Population on Farms	717	1,419	1,505	2,216	494	1,090	706	8,147
Total Area (Acres)	29,198	34,390	44,313	20,038	21,456	41,196	28,311	218,907
Improved (Acres)	23,282	13,231	26,419	7,399	8,848	18,100	10,088	107,375
Under Crops (Acres)	16,871	17,553	18,283	5,547	6,455	12,809	7,685	85,203
No. of Cattle (Total)	4,214	5,961	7,007	7,762	2,888	8,593	3,168	39,593
No. of Milk Cows	2,943	4,261	5,098	5,754	2,054	6,326	2,313	28,749
No. of Hogs	2,206	1,701	1,334	1,573	688	1,371	463	8,991
No. of Sheep	1,098	607	94	1,427	66	109	64	3,465
No. of Hens, Chickens	3,098	9,955	6,413	16,120	2,464	8,106	5,888	52,044
Wheat (Acres)	253	192	344	207	21	117	90	1,224
Oats (Acres)	5,222	2,443	5,252	6,113	1,493	4,066	1,483	26,072
Barley (Acres)	525	15	151	67	9	102	28	897
Hay (Acres)	10,749	5,856	11,527	12,005	4,580	6,843	5,252	57,712
Corn for Grain (Acres)	n.a.	-	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Potatoes	29	-	83	242	29	69	68	520

INDUSTRY

The following tables indicate that the manufacturing sector of the Kingston area has grown during the period 1951-1961; however, it has not kept pace with the overall growth of total economic activity. Industrial activity in Kingston is dominated by two major firms - Aluminum Company of Canada Ltd., employing 2,000 persons, and the Dupont Company, employing 3,000 persons. (Both of these manufacturing plants have research facilities attached to them.)

LABOUR FORCE, CITY OF KINGSTON

Labour Force Category	1951	%	1961	%	% Change 1961/51
Manufacturing	3,928	26.7	4,444	21.3	13.1
Construction	938	6.4	1,247	6.0	32.9
Transportation/Communication	852	5.8	1,189	5.7	39.6
Trade	2,377	16.2	2,899	13.9	22.0
Service (Finance, Real Estate)	484	3.3	691	3.3	42.8
Public Administration and Defence	5,923	40.3	9,680	46.4	63.4
Other and Primary Industries	189	1.3	732	3.4	287.3
Total	14,691	100.0	20,882	100.0	42.1

LABOUR FORCE, FRONTENAC COUNTY

Labour Force Category	1951	%	1961	%	% Change 1961/51
Manufacturing	6,012	23.1	6,200	19.4	3.0
Construction	1,859	7.2	2,001	6.3	7.6
Transportation/Communication	1,511	5.8	1,934	6.1	28.0
Trade	3,284	12.6	4,033	12.6	22.8
Finance/Real Estate	560	2.2	870	2.7	55.4
Service (including Public Administration and Defence)	9,540	36.7	14,217	44.6	49.0
Other and Primary Industries	3,222	12.3	2,630	8.3	(-18.4)
Total	25,993	100.0	31,885	100.0	22.6

The balance of the manufacturing sector is composed of a number of smaller firms.

KINGSTON AREA, PRINCIPAL STATISTICS, MANUFACTURING

Year	No. of Establishments	Number of Employees	Value of Shipments ($'000)
1961	78	5,964	120,029
1962	77	5,842	129,161
1963	79	6,045	144,123

Considering that two major companies in the manufacturing sector employ some 5,000 persons, average employment among the balance of the firms in 1963 was 15 persons per firm.

Industrial activity in Eastern Ontario has tended to locate in a number of centres closer to the Quebec - Ontario border and to the major metropolitan centres of Ottawa and Montreal. Thus, Cornwall has attracted nearly 40 per cent of all new industry in the Eastern Ontario Economic Region over the last decade, while Kingston by comparison has attracted a little better than three per cent.

NEW ESTABLISHMENTS - EASTERN ONTARIO ECONOMIC REGION
1957-1967

	Total No. of New Establishments	Per Cent of Total
Eastern Ontario Economic Region	96	100.0
Selected Centres:		
Cornwall	38	39.6
Kingston	3	3.1
Brockville	2	2.1
Prescott	3	3.1
Smiths Falls	3	3.1
Morrisburg	2	2.1
Gananoque	1	1.1

LABOUR FORCE COMPOSITION
EASTERN ONTARIO CITIES, 1961
(OVER 30,000)

Industry Classification	Cornwall		Peterborough		Kingston		Belleville	
	No.	%	No.	%	No.	%	No.	%
Primary Industries	56	0.4	64	0.4	58	0.3	47	0.4
Manufacturing	4,838	37.2	6,807	42.7	4,365	22.5	2,963	27.8
Construction	902	6.9	668	4.2	1,028	5.3	481	4.5
Transportation and Communication	1,243	9.5	341	2.1	1,111	5.7	1,497	14.0
Trade	1,772	13.6	2,462	15.5	2,462	12.7	1,733	16.2
Finance	285	2.2	564	3.5	639	3.3	312	2.9
Education	649	4.9	615	3.9	1,567	8.1	637	6.0
Health and Welfare	990	7.6	1,135	7.1	2,687	13.8	579	5.4
Service to Business	112	0.9	170	1.1	234	1.2	118	1.1
Personal Services	802	5.2	1,001	5.3	1,143	5.9	652	6.1
Public Administration	655	5.0	747	4.7	3,018	15.6	1,266	11.9
Other	714	5.6	1,341	8.5	1,079	5.5	381	3.6
Total	13,018	100.0	15,915	100.0	19,391	100.0	10,666	100.0

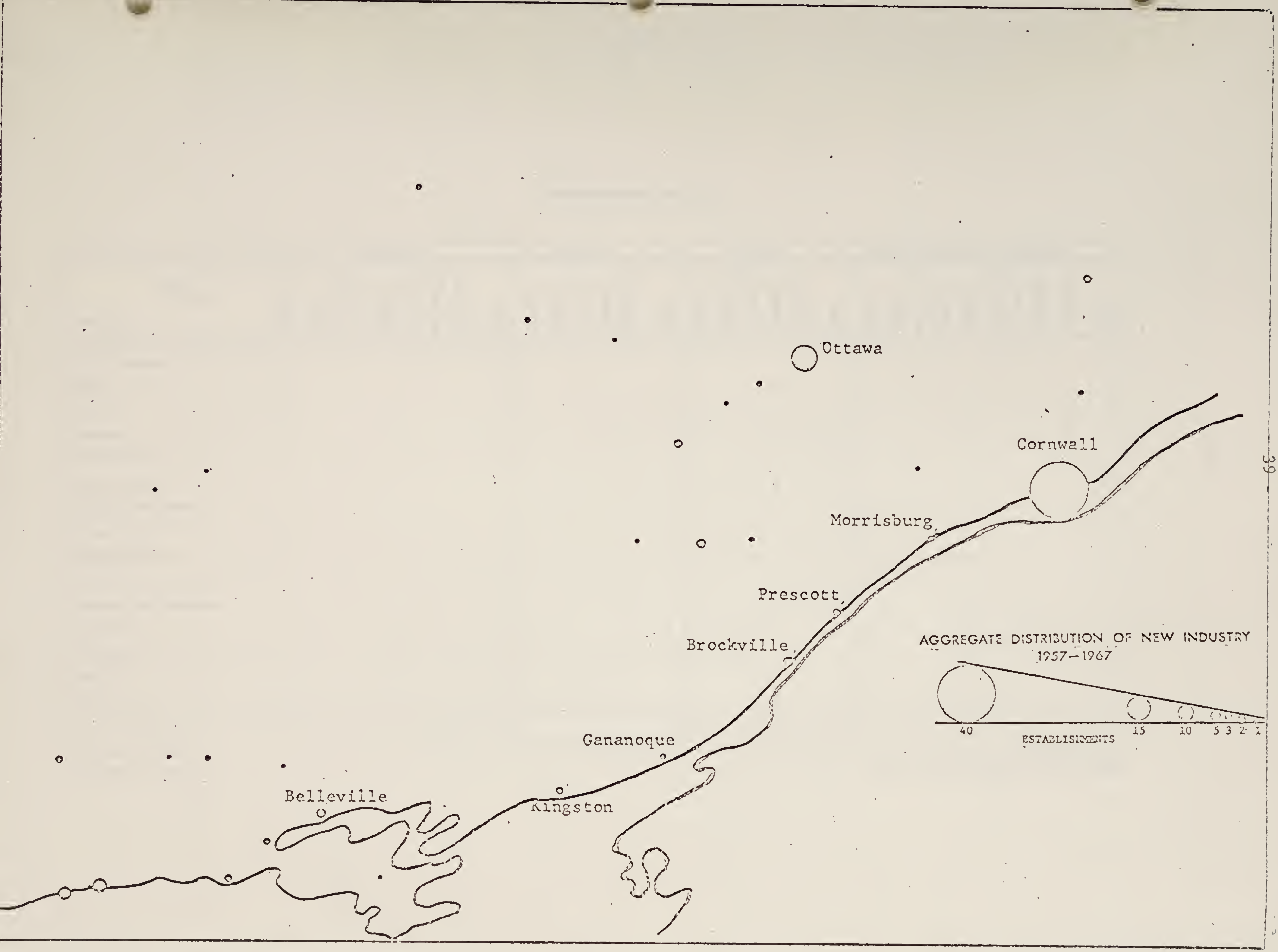
Closer examination of this data indicates that the existence of a nearby bridge facility alone is not necessarily a catalyst of industrial expansion. The Aggregate Distribution of New Industry map clearly shows that the existence of bridges at, or nearby, such centres as Gananoque, Brockville, Prescott and Morrisburg, has not noticeably affected their rates of industrial expansion between the years 1957 and 1967.

A similar industrial location pattern appears in the data outlining the loan monies made available to industry by the Ontario Development Corporation. The Counties of Northumberland, Hastings, Lanark and Leeds received 98.9 per cent of all loans, while Frontenac County did not receive any ODC assistance. While the above may reflect a loan policy of ODC, it is significant that firms in the four counties that received virtually all of the loan assistance also made over 67 per cent of all the applications for assistance.

The general weakness of the industrial sector in Kingston is further evidenced by the lack of significant plant expansions in recent years.

While both Kingston and Frontenac County lag behind the other adjacent counties and municipalities, in terms of industrial development, it should be pointed out that the eight-county area of Peterborough, Northumberland, Hastings, Lennox and Addington, Prince Edward, Frontenac, Lanark and Leeds, has experienced a disproportionately small share of the recent economic development of the province as a whole. In terms of new manufacturing establishments, 1967 capital expenditures in the area amounted to some $3 million, or 3.4 per cent of the Ontario total.

These establishments created 303 new jobs, which represents only 1.6 per cent of the provincial growth. In terms of plant expansions, the situation is similar. The 1967 data indicate a $4.2 million capital expenditure for the area, while the provincial figure was $153 million; the total area accounted for only 202 new jobs or 4.4 per cent of the provincial total from this source.



AGGREGATE DISTRIBUTION OF NEW INDUSTRY 1957—1967

NEW ESTABLISHMENTS, 1957-1967

	1957-1961									1962-1964						1965-1967						Total For The Period (1957-1967)									
Urban Centres Industry Group	Kingston	Picton	Brockville	Prescott	Cornwall	Smith Falls	Belleville	Morrisburg	TOTAL	Kingston	Prescott	Morrisburg	Cornwall	Belleville	TOTAL	Kingston	Belleville	Brockville	Cornwall	Gananoque	TOTAL	Kingston	Picton	Brockville	Prescott	Cornwall	Smith Falls	Belleville	Morrisburg	Gananoque	TOTAL
Food & Beverages						2			2																		2				2
Rubber												1			1														1		1
Textiles					1				1				2		2	1			4		5	1				7					8
Clothing													2		2				2	1	3					4				1	5
Wood Products			1			1			2										1		1			1		1	1				3
Paper & Allied																	1		1		2					1		1			2
Printing & Publishing																			1		1					1					1
Primary Metal											1				1										1						1
Metal Fabrication	1				1				2									1		1	2	1		1		1					3
Machinery			1						1																1						1
Transportation Equipment					1				1					1	1				1		1					2		1			3
Electrical		1			3	2			6	1					1		2		2		4	1	1			5		2			9
Non-Metallic					1				1				1		1											2					2
Chemical				1	3				4			1	4		5				2		2				1	9			1		11
Miscellaneous					3				3				1		1				1		1					5					5
Total For The Period	1	1	2	1	13	5	0	0	23	1	1	2	10	1	15	1	3	1	15	2	22	3	1	2	3	38	3	4	2	1	57
Percentage of Total																						5.3	1.7	3.5	5.3	66.7	5.3	7.0	3.5	1.7	100.0

The data presented above pertains to most of Eastern Ontario and represents expansion of the industrial sector including the immediate area of study. It is extremely unlikely, however, that the proposed crossing would have any significant effect on these industries. The data does point out the relative disadvantage of Kingston and Frontenac County and leads to a general conclusion of the area's unattractiveness to smaller industry. Industrial location is a complex activity and relates to many other factors besides transportation facilities.

SURVEY OF MAJOR INDUSTRIES OF THE KINGSTON AREA

Company Name	Date Est'd	Employees at Start		Employees at Date		Products
		M	F	M	F	
Aluminum Co. of Canada Ltd.	1944	2,479	1,270	1,724	83	Sheet aluminum, extruding shapes, seamless tubes, foil.
Aluminum Laboratories	1942	90	20	149	20	Research and development.
S. Anglin Company Ltd.	1865	10	1	60	10	Bldg. supplies, fine woodwork and related products.
Bo-Flan Photo Engraving Company Limited	1945	2		18	2	Art Work and printing plates.
Brookside-Prices Dairy	1961	34	1	70	19	Milk, ice cream.
Canadian Dredge and Dock Company Ltd. (Figs. Est.)	1917			18	2	Shipbuilding and repairs.
Canadian Industries Ltd.				65		Ammonia.
Coca-Cola Limited	1924	2		32	2	Coca-Cola, Fanta, Fresca, Tab, Sprite.
A. Davis and Sons Ltd.	1903	15		76	16	Leather.
Doyle's Wonder Bakery	1916	4		63	7	Bread and rolls.
DuPont of Canada Ltd.				2,500		Nylon continuous filament yarns.
Dye and Chemical Co. of Canada	1923			13	4	Food colours and chemical specialties.
Elder's Beverages	1921	14	2	14	2	Ginger ale, Pepsi-Cola, Orange and other flavours.
Fairbanks Morse (Can) Ltd.	1850			341	38	Locomotives, diesel engines, weighing systems, fluid systems, process equipment.
Fox E.S. Co. Ltd.	1965					Mechanical contractors.
Frontenac Floor and Wall Tile (Div. of United Ceramics Limited	1913			140	60	Ceramic Floor and wall tile.
Frontenac Quarries Ltd.	1935			12		Crushed limestone.
Graves Bros. Ltd.	1922	5		34	1	Plumbing, warehousing, sheet metal fabrications.

SURVEY OF MAJOR INDUSTRIES OF THE KINGSTON AREA (CONT'D)

Company Name	Date Est'd	Employees at Start		Employees at Date		Products
		M	F	M	F	
Glen Supply Co. Ltd.	1957	5	1	13	1	Builders' supplies and roof trusses.
Gus Marker Block & Tile Ltd.	1942	2		22	1	Concrete products.
R. E. Harding Ltd.	1964	23	2	38	1	Metal fabrication.
(Original C. Irving and Harding Limited)	1952	10	1			
K-D Manufacturing Co. Ltd.	1921	5		47	32	Picture frames.
Kingston Iron and Metal Ltd.	1910	2		25	1	Secondary materials, foundry.
MacPherson C.E. Ltd.	1933	15		35	2	Steel Plate fabrication, tank and boiler heads.
MacLachlan Lumber Co.	1962	39	1	49	6	Custom millwork, windows, sash, doors, stairs, cabinets, pallets, moulding and prefab building components.
Millhaven Fibers Ltd.				829	148	Fortrel polyester filament yarn.
Morco Products Limited (figures estimated)	1958			8	2	Trailer axles and components.
Muttarts Builders' Supplies (Kingston) Ltd.	1952	5		21	4	Building supplies, trusses and component parts.
National System of Baking	1922			3	9	Breads, cakes and pastries.
Patterson Concrete Prod. Ltd.	1956	8	1	8	1	Concrete products.
Permanent Transit-Mix Concrete Limited	1954	6		14	1	Ready-mix concrete.
Presland Iron & Steel Ltd.	1965	8	1	14	1	Structural steel fabrication.
Rockdale Dairy	1933	3		12	8	Dairy Products.
Topliss Rye Bakery Ltd.	1957	6	5	11	12	Breads, cakes and pastries.
Weston Bakeries Ltd.	1949	75	30	98	11	Bread and rolls.
Weller Electric Corp.	1964	3	2	11	10	Soldering guns and irons.
Wilmot's Dairy Ltd.	1932	2		73	19	Dairy products.
Vicom Ltd.				45	3	Precision machining.

The above survey of industrial firms in the Kingston urban area shows the slow growth, and actual decline of some components, of the industrial sector. There has been limited expansion in the number of employees in each industry and there has been no significant addition to the corporate population within the last decade. The most significant decline has been the closure of the Kingston Shipyards which at one time employed over 200 people.

Industrial Sector Upperstate New York

The major function of an additional international bridge between Kingston and Cape Vincent would be to serve as a connection for local traffic between Frontenac County in Canada and the New York State counties of Jefferson, Lewis and possibly St. Lawrence and Franklin. It is obvious that the amount of traffic that will utilize this proposed bridge and the potential economic benefits will be greatly influenced by the economic structure of both areas. If the economic structure of the Upperstate New York area was strong and indicated both current and future prosperity, and further if the productive output or market potential was such as to create a flow of people and goods between the Kingston area and Upperstate New York, then the feasibility of the proposed bridge would be improved.

The following quotation from the Black River-St. Lawrence Economic Development District Survey indicates the current economic condition of the area.

"Only St. Lawrence County, among the four counties in the district, had an annual rate of population growth of one per cent or better, roughly approximating that of the State as a whole. Construction of the St. Lawrence Seaway and Power projects in the 1950's and the expansion of four institutions of higher education at Canton and Potsdam have augmented population growth in St. Lawrence County.

Substantial net outmigration has produced the slow rate of population increase. Even St. Lawrence County has lost population via migration. Depressed economic conditions and inadequate opportunity relative to other parts of the State and Nation have been the primary causes of this high rate of outmigration. Franklin and Lewis, the most rural of the four counties, have had the greatest rates of outmigration. This can be traced partly to the decline in agricultural employment and the scarcity of alternative sources of employment in these counties.

The district has a definitely unfavorable dependent-worker ratio. That is, the proportion of the population in the most productive age group, 25-44 years, is substantially below the average for both the State and Nation, while the proportion under 15 and over 65 is higher. This tends to make the cost of both welfare and education, relative to the district's income base, extremely high. This also has serious implications for the available labor supply. The district has apparently lost, and is continuing to lose, some of the potentially most productive members of its labor force because of a lack of economic opportunity.

Many of those who remain are persons whose mobility is limited by a lack of education or skill. This conclusion is supported by the fact that median school years completed by the male population 25 years of age and over in 1960 was well below average for both the State and the Nation. Although this is not reflected in the relatively small proportion of persons with less than five years of formal education, it becomes apparent from data on persons with less than a high school education." ...

"The persistence of a high level of unemployment in the district has undoubtedly contributed to the low rate of participation in the labor force. In the period 1962 to 1965, unemployment in the district fell from 8.8 percent to 7.5 percent, and was 6 percent or above in each of the three labor market areas. In the same period, however, employment fell by about 1,500 and the work force by 3,100. Both outmigration and the withdrawal of unemployed persons from the work force have been responsible for the decline. Reductions in unemployment in the district in the past few years have not been the result of any real improvement in local economic conditions.

> Median family income in each of the four counties in the district was well below State and national averages in 1959. The proportion of families with incomes under $3,000 was above State and national averages for the district as a whole, but slightly below the United States percentage in Jefferson and St. Lawrence counties. In addition, all counties in the district had a relatively small percentage of families with incomes of $10,000 or more. A major factor contributing to the low family income is the highly seasonal nature of employment and the resulting dependence of many families on unemployment insurance during a large part of the year. Another factor, caused by the economic structure of the district, is that a large percentage of jobs call for unskilled and semi-skilled labor. In 1960, the percentage of service workers and laborers was well above State and national averages while the proportion of professional and technical workers was substantially lower."

The following tables show the economic profile of the four northwestern counties of New York State. It can be readily seen that the counties of Jefferson and St. Lawrence are the more prosperous counties among the four. The manufacturing and commercial activity of Upperstate New York is concentrated in three urban areas: (1) Watertown (Jefferson County), (2) Ogdensburg (St. Lawrence County), and (3) Massena (St. Lawrence County).

Northern New York State neither presents a flourishing industrial or commercial community nor a satisfactory market for the industrial and commercial output of the Kingston-Frontenac County region. The only conclusion to be drawn in respect of the possible benefits to the Kingston industrial-commercial community from the proposed international bridge is that any contribution is likely to be extremely marginal. This same view was expressed in the study carried out by Canadian Urban Economics when they stated, "The St. Lawrence River subregion of Jefferson - the area immediately adjacent to the southern

shores of Wolfe Island - is sparsely populated and is dependent mainly on tourism for its livelihood. It has experienced virtually no growth in measurable economic terms over the past 15 years, and little is expected in the future. Wolfe Island (and Kingston area), although it is part of the geographic area of the St. Lawrence River region, has very little connection to the American shore from an economic point of view. We do not believe that a bridge connection to the American mainland would substantially alter this pattern; except insofar as it relates to the tourist industry ..."

EMPLOYMENT BY MAJOR INDUSTRY,
KINGSTON-WOLFE ISLAND-CAPE VINCENT INTERNATIONAL BRIDGE

New York State Employment Trends (000 Persons)

	Jefferson County			Lewis County			Franklin and St. Lawrence County		
	1960	1965	% Change	1960	1965	% Change	1960	1965	% Change
Total	31.2	30.3	- 2.9	n.a.	7.7	n.a.	50.8	48.7	- 4.3
Agriculture	4.5	3.3	-26.6	n.a.	1.8	n.a.	8.5	6.4	-24.7
Total Non-Agricultural	22.5	23.1	+ 2.6	n.a.	4.7	n.a.	34.2	35.0	+ 2.3
Manufacturing	6.2	6.0	- 3.2	n.a.	1.9	n.a.	9.0	9.9	+10.0
Construction	1.1	1.1	-	n.a.	0.1	n.a.	1.4	1.0	-28.5
Public Utilities	1.6	1.5	- 6.3	n.a.	0.1	n.a.	1.8	1.7	- 5.5
Wholesale and Retail Trade	4.9	5.0	+ 2.0	n.a.	0.6	n.a.	6.4	6.1	- 4.6
Finance and Real Estate	1.2	1.1	- 8.3	n.a.	0.1	n.a.	0.8	0.8	-
Services, Mining, Misc.	3.3	3.7	+12.1	n.a.	0.4	n.a.	5.0	6.4	+28.0
Government	4.2	4.5	+ 7.1	n.a.	1.6	n.a.	8.4	9.1	+ 8.3
All Others	4.2	3.9	- 7.1	n.a.	1.2	n.a.	8.1	7.2	-11.1

Source: Black River-St. Lawrence Economic Development District Study.

KINGSTON - WOLFE IS. - CAPE VINCENT INTERNATIONAL BRIDGE

Dollar Value By Major Economic Sector (1963)
New York State
North Western Counties

	Jefferson County (000's)	St. Lawrence County (000's)	Lewis County (000's)	Franklin County (000's)
Value added by Manufacturing	$ 56,359	$118,683	$17,199	$10,071
Value added by Mining	765	27,765	n.a.	n.a.
Wholesale Sales	50,326	46,844	14,496	38,284
Retail Sales	126,245	128,658	22,229	54,146
Service Receipts	13,513	12,007	2,134	5,704
Value of farm products sold	24,333	25,331	14,663	10,587

Profile of Economic Concentration 1963
New York State - North Western Counties

		Jefferson	St. Lawrence	Lewis	Franklin
Farms	Number	2,048	2,895	1,091	1,092
	Acres over 1000	16	11	6	5
	Average Size	237	230	237	219
Retail Establishments					
	Number	1,136	1,216	234	630
	Total Sales(000's)	$126,245	$128,658	$22,229	$54,146
	Average sales (000's)	$ 111	$ 106	$ 95	$ 86
Manufacturing establishments					
	Number	119	96	47	69
	Value Added (000's)	$ 56,359	$118,683	$17,199	$10,071
	Average Value Added (000's)	$ 474	$ 1,236	$ 366	$ 146
Finaacial Institutions					
	No. of Offices	23	28	7	9
	Total deposits (000's)	$209,244	$144,448	$23,138	$47,086
	Average Deposit (000's)	$ 9,098	$ 5,159	$ 3,305	$ 5,232

Source: Black River-St. Lawrence Economic Development District Study

POPULATION FOR SELECTIVE COUNTIES IN UPPER NEW YORK STATE

Counties	Total Population (1960)	Urban %	Net Migration (%)	Population % Change (1950-1960)
Jefferson	87,835	42.7	-8.6	2.7
Lewis	23,249	15.6	-12.5	3.2
Oneida	264,401	73.0	5.0	18.6
St. Lawrence	111,239	44.4	-4.2	12.5
Oswego	86,118	42.3	-1.9	11.6
Onondaga	423,028	80.9	7.1	23.8

Source: U.S. Data Book, Department of Commerce

TOTAL EMPLOYEES FOR SELECTIVE COUNTIES IN UPPER NEW YORK STATE

Counties	1963 Total Employees	1958 Total Employees
Jefferson	5,704	5,981
Lewis	1,883	1,648
Oneida	26,565	30,663
St. Lawrence	7,576	6,832
Oswego	7,677	8,130
Onondaga	57,483	59,011
State	1,853,050	1,915,877

Source: U.S. 1963 Census of Manufactures

TOURISM AND RECREATION

South-Central Ontario and Wolfe Island

Tourism is a major industry in all of Ontario and in many areas throughout the Province it occupies a predominant position in the local economy. A recent study of tourism in the Province (1966) revealed that tourist expenditures throughout the Province amounted to $1,094,207,000 and of this $648,474,000 (59.0 per cent) represents expenditures by tourists from the U.S.A. and other provinces.

The tourist expenditures of southeastern Ontario in the area of concern to the present study are estimated to be $74,641,889 or 6.6 per cent of the total expenditures of tourists in Ontario.

Summer Residence Development

A major portion of the recreation activities in Southern Ontario has evolved around the growth of the summer residence. Much of Southern Ontario is endowed with scenic lakes and rivers with suitable shoreland for the construction of summer residences. Thus with the increase in population, mobility and income levels many Ontario counties have experienced a rapid growth in the construction of these facilities. Perhaps one of the major causes of this form of recreational pursuit is the greatly increased levels of urbanization and the consequent high density residential environment of a large sector of the population. It is anticipated that the trend towards urban concentration will continue to increase thereby creating further pressures for increased recreational land.

The following tables show the growth of summer residences in all counties in Ontario between 1951 and 1967. The period between 1951-1961 saw rapid growth in all parts of the Province as cottage lots became available from the Department of Lands and Forests and as post-war personal incomes continued to rise. The growth of this sector of the tourist industry slowed considerably from 1961 through to 1967 with some counties decreasing in the number of cottages.

Frontenac County is one of the major summer cottage areas in the Province and has shown considerable growth in the last 15 years. Since 1961 Frontenac County has experienced the highest growth rate of any of the counties in either eastern or central Ontario, largely due to the abundance of natural tourist sites and well-developed transportation networks. The major origins of the cottage owners are the large urban centres such as Toronto, Ottawa, Oshawa and Kingston. And as is shown on the tables presented, those counties with good summer residence sites in close proximity to those larger centres have experienced the largest absolute growth in this type of development. It is to be expected that as these areas experience increased growth and the consequent higher densities, cottage developments will increase faster, relative to current growth rates, in those areas slightly more distant from the urban centres. This trend has already shown itself in Frontenac County where the growth rate during the period from 1961-1967 was higher than all of the adjacent counties, including the resort areas of Haliburton and Muskoka. One of the reasons for this may be that at the present time the County of Frontenac has far less planning controls than Haliburton and Muskoka, particularly Muskoka. For example,

in the Muskoka area, where for many years summer cottage development was uncontrolled, recent studies have shown that there is considerable pollution of lakes and this has caused municipal action to control development. Because of this control, development has tended to press toward other areas where these controls do not exist. This would suggest that cottage development in Frontenac will slow down considerably in the private sector because of the implementation of these controls, once it is realized that pollution of water is occurring.

GROWTH IN SUMMER RESIDENCES IN ONTARIO

(By County)

County	No. of Summer Residences 1951	No. of Summer Residences 1961	% Change 1951-61	No. of Summer Residences 1967	% Change 1961-67
			Increase		Increase
Algoma	0	262	-	353	34.7
Brant	9	6	-33.3	11	83.3
Bruce	2,239	4,704	110.1	6,128	30.2
Carleton	725	1,541	112.5	1,541	-
Cochrane	185	696	276.2	886	27.3
Dufferin	86	208	141.8	329	58.1
Dundas	35	26	34.6	34	30.7
Durham	636	811	27.5	901	11.1
Elgin	269	216	- 19.7	241	11.6
Essex	2,972	3,766	26.7	3,506	- 6.9
Frontenac	799	2,187	173.7	3,302	50.9
Glengarry	137	363	164.9	534	47.1
Grenville	226	436	92.9	482	10.5
Grey	546	1,441	163.9	2,352	63.2
Haldimand	931	2,391	156.8	2,686	12.3
Haliburton	1,363	4,813	253.1	6,865	42.6
Halton	137	27	- 80.2	23	-14.8
Hastings	507	1,786	252.2	2,661	48.9
Huron	1,091	1,475	35.1	1,928	30.7
Kenora	179	1,304	628.4	2,001	53.4
Kent	737	1,074	45.7	1,115	3.8
Lambton	1,601	1,988	24.2	2,330	17.7
Lanark	542	1,663	206.8	2,442	46.8
Leeds	1,335	2,565	92.1	3,369	31.3
Lennox & Addington	268	712	165.6	1,034	45.2
Lincoln	310	270	- 12.9	192	-28.8
Manitoulin	370	754	103.7	923	22.4
Middlesex	2	33	-	45	36.4
Muskoka	4,710	10,410	121.0	13,907	33.6
Nipissing	513	1,465	185.6	1,641	12.0
Norfolk	1,064	1,728	62.4	1,860	7.6
Northumberland	1,324	2,232	68.6	2,751	23.3
Ontario	1,749	3,043	73.9	3,450	13.4

(continued)

GROWTH IN SUMMER RESIDENCES IN ONTARIO

(By County)

County	No of Summer Residences 1951	No. of Summer Residences 1961	% Change 1951-61 Increase	No. of Summer Residences 1967	% Change 1961-67 Increase
Oxford	11	39	-	55	41.0
Parry Sound	1,015	3,742	268.7	5,576	49.0
Peel	477	499	4.6	461	-7.6
Perth	2	1	-	3	-
Peterborough	1,630	6,202	280.4	8,810	42.1
Prescott	41	132	221.9	336	154.5
Prince Edward	383	674	75.9	862	27.9
Rainy River	0	122	-	273	123.7
Renfrew	437	1,817	315.8	2,709	49.1
Russell	38	119	213.2	224	88.2
Simcoe	9,298	13,136	41.3	14,802	12.7
Stormont	0	126	-	140	11.1
Sudbury	400	1,870	367.5	2,586	38.3
Thunder Bay	405	1,339	230.6	1,872	39.8
Timiskaming	230	587	155.2	738	25.7
Victoria	2,466	5,269	113.6	6,792	28.9
Waterloo	109	156	43.1	146	- 6.4
Welland	1,143	1,403	22.7	1,395	- 0.5
Wellington	152	476	213.1	760	59.6
Wentworth	230	129	- 43.0	95	-26.4
York	3,850	4,798	24.6	4,749	- 1.0

GROWTH IN SUMMER RESIDENCES IN ONTARIO FOR SELECT COUNTIES

Eastern Ontario	Cottage Pop. 1967	Per Cent Change 1961-1967	Per Cent Change 1951-1961
Frontenac	3,302	50.9	173.7
Lennox and Addington	1,034	45.2	165.6
Lanark	2,442	46.8	206.8
Leeds	3,369	31.3	92.1
Hastings	2,661	48.9	252.2
Prince Edward Island	862	27.9	75.9
Renfrew	2,709	49.1	315.8
Central Ontario			
Peterborough	8,810	42.1	280.4
Haliburton	6,865	42.6	253.1
Muskoka	13,907	33.6	121.0
Simcoe	14,802	12.7	41.3
Parry Sound	5,576	49.0	268.7
Nipissing	1,641	12.0	185.6
Counties With Direct Access to International Bridges			
Leeds	3,369	31.3	92.1
Lanark	2,442	46.8	206.8
Dundas	34	30.7	34.6
Carleton	1,541	-	112.5
Stormont	140	11.1	-
Glengarry	534	47.1	164.9
Grenville	482	10.5	92.9

A Survey of Cottage Ownership in Frontenac County

As indicated formerly, the County of Frontenac has experienced a rapid increase in the population of summer residences within the last 15 years. This growth has been a result of attracting tourists from three major areas: 1) Metropolitan Toronto and region; 2) Metropolitan Ottawa and region; and 3) the Northeastern U.S.A. urban areas. The development of summer residences is conditioned by three important factors, i.e, the existence of good natural cottage sites (and availability); a satisfactory level of income per capita; and a reasonable transportation system to provide mobility to the cottage site. It should be recognized immediately that all areas and regions compete with each other in each of these three aspects to attract the tourist or summer resident. The existence of high quality cottage sites, at a reasonably attractive price, will be of no encouragement to tourists if the mobility and access to such areas is not provided. The spatial separation in terms of time and distance costs is important to the relative attractiveness of particular areas. It can be generally stated that Frontenac County possesses all of the above-mentioned characteristics and the presence of these factors accounts in a large measure for the rapid growth of summer residences in this County.

It is often contended that the existence of an additional international bridge connecting Kingston and Cape Vincent would contribute to an accelerated growth of the tourist and recreational sector. This statement would suggest that a major impediment to the future growth in this sector is the lack of adequate North-South transportation routes. In order to understand the influence of the North-South transportation facilities, a survey was conducted of cottage ownership in the Counties of Lennox and Addington, Frontenac,Lanark and Leeds.

The former two counties do not have a direct highway connection to Upperstate New York, while the latter two counties have a direct highway connection via the Thousand Islands-Ivy Lea Bridge. It is assumed that the terrain and quality of recreation land is similar for both areas. If the transportation network is a major determinant in the growth of the summer residence sector, it could be expected that the Counties of Lanark and Leeds would grow at a greater rate than will Frontenac County.

The following data shows the results of the sample survey of summer residence ownership in the Counties of Leeds, Lanark, Lennox and Addington, and Frontenac. The data for the survey was obtained from The Hydro-Electric Power Commission of Ontario customer records and therefore contains only those summer residences that are supplied with electric power. The data was collected by Hydro sales areas designated as Brockville, Perth, Kingston and Tweed. The first two areas generally correspond with the boundaries of Lanark and Leeds Counties; while the latter two areas correspond with the Counties of Frontenac and Lennox and Addington.

Hydro Customer Area	No. of Cottages	Per Cent Owned by U.S. Residents
Brockville (Leeds)	1,872	27.3
Perth (Lanark)	4,287	15.0
Kingston (Frontenac and Lennox and Addington)	2,607	19.3
Tweed (Frontenac and Lennox and Addington)	1,921	18.6

A sample of the above summer residences showed the following home residences for the U.S.A. owners.

Brockville Area: (Sample of 60 cottages from a total of 511 U.S.A.-owned cottages)*

Origin	No. of Cottages	Percentage of U.S.A. Summer Residences
New York State		
Rochester	6	10.0
Syracuse	5	8.3
New York City	5	8.3
Alexandria	2	3.3
Watertown	1	1.7
Rome	2	3.3
Ogdensburg	1	1.7
Liverpool	2	3.3
Fayatteville	1	1.7
Parma	1	1.7
Athens	1	1.7
Geneva	1	1.7
Yorkville	1	1.7
Coeynein	1	1.6
Total New York State	30	50.0
Pennsylvania	8	13.0
Maryland	2	3.3
New Jersey	3	5.0
Connecticut	2	3.3
Virginia	1	1.7
Illinois	2	3.3
Ohio	2	3.3
Delaware	1	1.7
Florida	4	6.7
Miscellaneous	5	8.3
Total Sample	60	100.0

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* Samples were selected by a random procedure.

Kingston Area: (Sample of 55 summer residences from a total of 503 U.S.A.-owned cottages)

Origin	No. of Cottages	Percentage of U.S.A. Summer Residences
New York State		
Rochester	10	18.2
Syracuse	5	9.1
New York City	2	3.6
Alma	2	3.6
Churchville	1	1.8
Nunda	1	1.8
Watertown	1	1.8
Spiner	1	1.8
Oswego	1	1.8
West Isle	1	1.8
Applician	1	1.8
Buffalo	1	1.8
East Aurora	1	1.8
Geneva	1	1.8
Upper Nyack	1	1.8
Utica	1	1.8
Endicott	1	1.8
Cortland	1	1.8
Unknown	1	1.8
Total New York State	34	61.8
Pennsylvania	5	9.2
New Jersey	3	5.5
Ohio	3	5.5
Connecticut	1	1.8
Delaware	1	1.8
Miscellaneous	8	14.5
	55	100.0

The Brockville area shows a higher percentage of U.S.A. summer residence owners than does the Kingston area (i.e., Brockville - 27.3 per cent, Kingston - 19.3 per cent). This is largely due to the fact that the Kingston area, being closer to the major urban centres of

Toronto, Oshawa and Kingston, has a larger total cottage population with more Canadian owners. The Brockville area and the Kingston area both contain approximately 500 cottages owned by U.S.A. residents.

The distribution of the origins of the American cottage owners is very similar for both areas. In the Brockville area 50 per cent of the U.S.A. cottage owners are residents of New York State with a major portion of these being residents of Eastern New York State. In the Kingston area 62 per cent of the U.S.A. cottage owners are residents of New York State, again the major portion being residents of Eastern New York State. The balance of the American cottage owners in both of these areas are residents of the eastern seaboard States (with the exception of those from Ohio and Illinois).

The significant factor presented in the above survey is that, while the Brockville area is serviced by two international road spans (and has had these facilities for a number of years) and the Kingston area is without such direct service, the former has not attracted a greater cottage development, with respect to U.S.A. ownership, than the latter.

It has been suggested that an international crossing at Kingston-Cape Vincent would encourage a large increase in the amount of tourist traffic and summer residence ownership in the Kingston area. In this regard it should be cautioned that such was not the result in the Brockville area. Some possible reasons for this are:

1) There exists many ideal summer residence locations south of the international border.

2) The income level of the northern New York State area immediately adjacent to the proposed and existing bridges is relatively low.

3) The proposed bridge will eliminate less than 25 minutes in travel time to a summer residence. (This is unlikely to be significant in terms of a recreation trip.)

General Tourist Traffic

It is very doubtful whether a new international crossing will add to the tourist activity in the Kingston area, particularly since the proposed bridge will only eliminate approximately 25 miles of travel and only approximately 30 minutes in travelling time from each journey. It has been suggested, however, that due to the congestion on the present Ivy Lea Bridge, the tourist traffic will decline and thus the proposed bridge is necessary to prevent any tourists diverting to other areas. We have examined the cumulative traffic flows across this span by month and find that the summer holiday period shows considerable peaking. This peaking also suggests that there exists considerable over-capacity for this bridge and any proposed bridge during the balance of the year. The following table shows the percentage of traffic across this span by month.

Percentage of Traffic by Month
Thousand Islands Bridge

Month	Percentage	Month	Percentage
January	2.2	July	21.1
February	2.5	August	22.5
March	2.9	September	13.1
April	3.2	October	7.3
May	6.7	November	3.2
June	11.7	December	3.2

The months of July and August contribute almost 50% of the total year's traffic and this is indicative of a strong tourist contribution. It is our conclusion that any delay caused the traffic during the summer months is a

result of the limitations imposed by the toll and customs facilities, and that these facilities may well bear improvement. In the evaluation of the highway engineers and planners, the current bridge is capable of handling all forecast traffic (at present growth rates) for the next 20 years with only modest delays during summer peak activities. With the improvement of toll and customs facilities, it is expected that the summer time delay can be kept within an acceptable limit.

A Department of Highway survey in 1964 showed that:

1) 46.2% of guests at commercial resorts were residents of the U.S.A.,

2) 24.5% of campers in provincial parks were from the U.S.A.,

3) 12.0% and 11.4% of cottage owners and visitors to day parks respectively were from the U.S.A.

The same survey indicated that, "Cottagers do not care to travel too far between home and cottage; campers do not mind travelling quite a distance before reaching a provincial park; and guests at commercial resorts prefer to spend their holidays quite far from home." This would indicate that the majority of those trips resulting in the utilization of commercial resort or camping facilities are not as sensitive to time delays nor distance factor. (It should be noted that these two classifications account for the major flow of American tourists.) Thus, it would appear that a modest time or distance alteration would not deter nor induce any significant quantity of tourist traffic. The quality of tourist attraction appears to have far more significance for these types of travellers. This was indicated in the Canadian Urban

Economics report of tourist activity, "The study of directional preferences over a period of time indicated that major road improvements do not materially affect recreational travel pattern. People will continue to go in the direction that habit established in the first place - and that habit has been established because certain areas are more attractive than others ..." It would appear that promotion of the area's tourist facilities and attractions may have more value than any major road improvements.

It should be noted that the above reasoning would not apply to Wolfe Island as in this case the major tourist attractions would be cottage and marina facilities and perhaps a day park. Thus, any undue delay or difficulty in gaining access to these facilities may deter substantial (relatively) tourist traffic. Such delay would also prevent those residents of Wolfe Island (permanent and summer) from utilizing the facilities, social and recreational, provided by the City of Kingston.

TRAFFIC PATTERNS
IVY LEA BRIDGE
COLLINS LANDING, N.Y.

(Inbound Traffic)

	1967 A.D.T.	1968 A.D.T.
January	431	473
February	482	501
March	539	564
April	607	811
May	1,270	1,251
June	2,199	1,885
July	3,969	3,401
August	4,247	4,362
September	2,466	1,826
October	1,385	1,042
November	612	607
December	595	491
Annual Average	1,579	1,435

Source: Dominion Bureau of Statistics.

IVY LEA BRIDGE (1000 ISLANDS)
COLLINS LANDING, N.Y.
ANNUAL TRAFFIC DATA

Year	A.A.D.T. Inbound	Per Cent Change Over Prior Year
1968	2,820	- 9.1
1967	3,158	+20.3 (Expo 67)
1966	2,624	+ 9.5
1965	2,356	+13.0
1964	2,120	+11.6
1963	1,900	+11.8
1962	1,700	- 9.7
1961	1,882	+ 6.2
1960	1,772	+ 0.5
1959	1,764	+ 5.0
1958	1,680	+ 4.2

Source: Dominion Bureau of Statistics.

COTTAGE DEVELOPMENT
FRONTENAC COUNTY
KINGSTON-WOLFE ISLAND-CAPE VINCENT INTERNATIONAL BRIDGE

Township	Total Cottages	Canadian Owned	%	U.S. Owned	%
Barrie	650	509	(78.3)	141	(21.7)
Bedford	(1,045)	-		-	
Clarendon and Miller	398	219	(55.0)	179	(45.0)
Hinchinbrooke	269	228	(84.8)	41	(15.2)
Howe Island	210	150	(71.4)	60	(28.6)
Kingston	-	-		-	
Loughborough	467	369	(79.0)	98	(21.0)
Olden	470	390	(83.5)	80	(16.5)
Oso	343	277	(80.8)	66	(19.2)
Palmerston	242	146	(60.4)	96	(39.6)
Pittsburgh	325	300	(92.3)	25	(7.7)
Portland	218	205	(94.0)	13	(6.0)
Storrington	(950)	-		-	
Wolfe Island	228	115	(50.4)	113	(49.6)
Total	(5,815) 3,820	2,908	(76.1)	912	(23.9)

SUMMARY OF SECTOR ANALYSIS

The purpose of this section of the report has been to provide some description of the benefits, if any, that will accrue in the various economic sectors as they are found within Eastern Ontario because of the construction of the proposed bridge facility. It is our conclusion after having examined the nature of the various sectors that the proposed bridge will contribute little to each sector.

The agricultural sector exhibits a negative or extremely slow growth rate. The major markets for this sector's production are in an east-west direction, i.e., Montreal, Quebec, Ottawa and Toronto, and little if any agricultural production will flow across the proposed bridge in either direction.

The benefits to this sector from an improvement in transportation facilities will come about because of:

(a) an expansion of markets due to the lower costs of shipping production

(b) an increase in the population base of current markets thus increasing both the strength and the size of the local market

(c) a reduction in farm production costs due to lower factor prices related to the reduction in transportation costs

(d) a large increase in transient residents such as tourists and visitors who increase the daily population and therefore the level of local consumption.

From the sector description provided earlier it is evident that

there will be no benefits arising from the first three factors. There is little marketing of agricultural production within the area made accessible by the bridge and none of the inputs are purchased from this area. The only effect the proposed bridge will have on agriculture in this area is that some increase in consumption can be expected due to the additional tourist traffic created by the bridge (see tourist sector).

The housing and residential development activities in the area expected to be influenced by the proposed bridge will be localized in the Kingston urban area. The increase in housing units will occur due to increases in the population base through immigration, migration to urban areas and natural increase. It is expected that the Kingston urban area will increase by approximately 30,000 people by 1985. Any benefits from the proposed bridge construction will be the result:

1) of increasing the supply of low cost serviced land which is accessible to the city center
2) of increasing the supply of attractive cottage lots available for recreation activities
3) of providing suitable land for residential development with higher urban qualities at a lower total cost than could be provided without the bridge.

It is obvious that the bridge will provide both (1) and (2) above, however, it should be equally obvious that save for minor exceptions these activities will simply be transfers from other land areas in the region and will not represent new economic activities which would justify the required investment.

The industrial activity of the land area tributary to the proposed bridge is concentrated in the Kingston urban region and the major commodity

flows both to and from these producing points are east-west movements. Very little traffic flows north-south through Upperstate New York. If the economic structure of the Upperstate New York area was strong and indicated both current and future prosperity, and further if the productive output or market potential was such as to create a flow of people and goods between the Kingston area and Upperstate New York, then the feasibility of the proposed bridge would be improved.

Northern New York State neither presents a flourishing industrial or commercial community nor a satisfactory market for the industrial and commercial output of the Kingston-Frontenac County region. The only conclusion to be drawn in respect of the possible benefits to the Kingston industrial-commercial community from the proposed international bridge is that any contribution is likely to be extremely marginal.

The tourist and recreation sector is a vital segment of the Eastern Ontario economy and the expenditures on this activity within the eastern part of the Province are estimated to be $74 million or 6.6 per cent of the total expenditures of tourists in Ontario. It has been suggested that the existence of an additional international bridge connecting Kingston and Cape Vincent would contribute to an accelerated growth of the tourist and recreational sector. This statement would suggest that a major impediment to the future growth in this sector is the lack of adequate north-south transportation routes.

This is not the case as shown in the survey of cottage ownership. Areas without any direct connection to U.S. points developed, in terms of U.S. summer residence ownership, as rapidly as those areas with direct access via an international bridge. Modest time or distance alteration

do not deter nor induce any significant quantity of tourist traffic. The quality of tourist attraction appears to have far more significance for most recreation activities.

PROPOSED BRIDGE COSTS

After a general review of all cost estimates as presented by DeLeuw Cather in their report and a discussion with the Bridge Office of the Department of Highways, the estimate of bridge costs remains at approximately $30 million. It is expected that by the date of construction, if such was to take place, the costs involved would be substantially increased; however, due to the lack of a specific bridge design the precise costs could not be refined further. The reader should be cautioned that the costs could be significantly higher than $30 million.

Several possible bridge sites were selected on both the north and south channel of the St. Lawrence River. The factors considered in the evaluation of the sites were: depth of water, length of crossing, navigational clearance, foundation conditions and the effect of wind and ice. Based on certain economic and structural criteria, the most suitable bridge type was adopted for each site, and preliminary design and cost estimates were carried out.

Estimated Construction, Maintenance and Operating Costs

All cost estimates have been made in Canadian dollars, and include an allowance of 15 per cent to cover engineering and contingencies on all works.

The division between the American and Canadian portion of the work was assumed to occur at mid-span of the southerly navigational bridge. No sales tax was applied to the American portion of the work, but applicable federal and provincial sales taxes were applied to the Canadian portion.

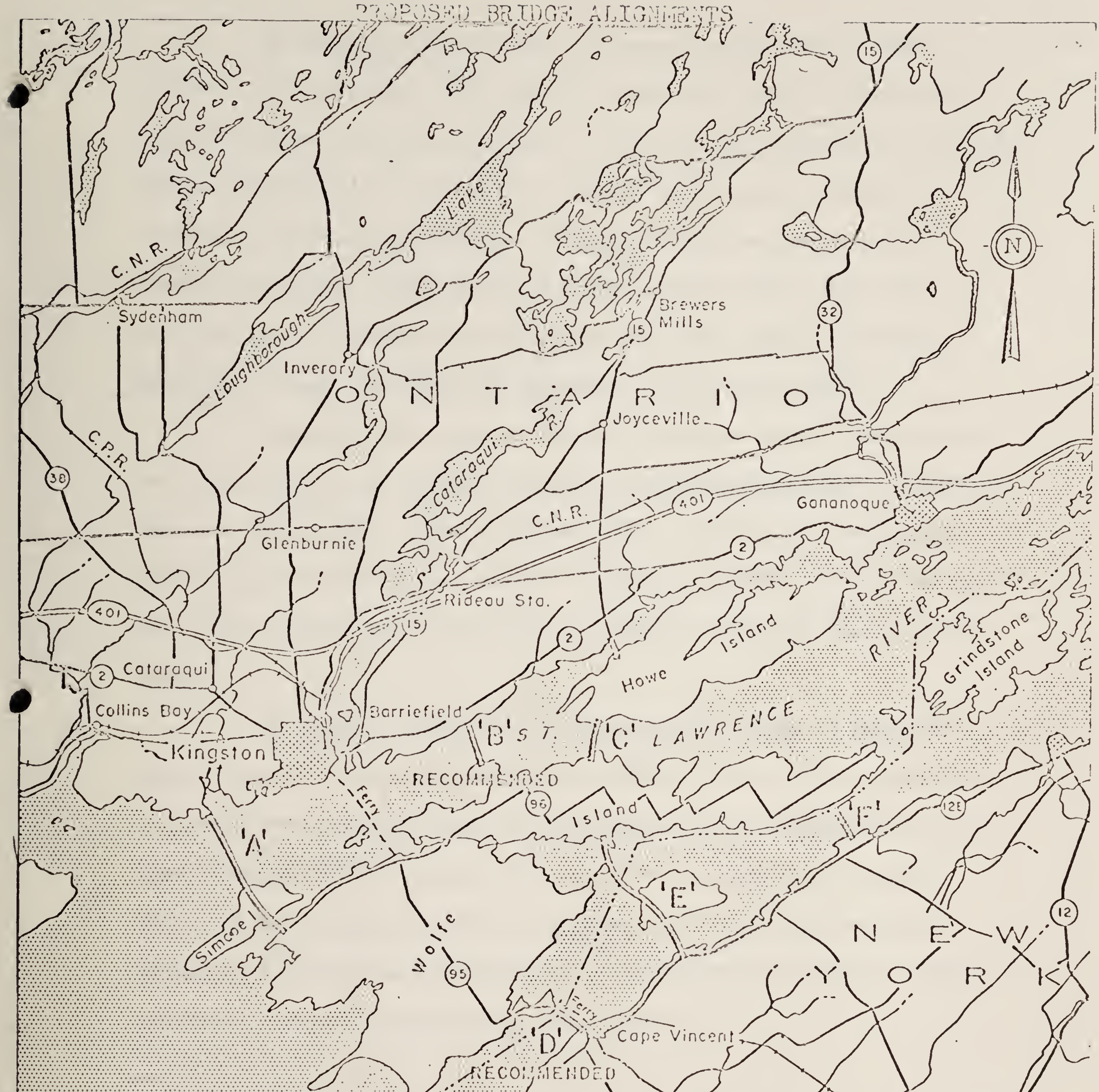
ESTIMATED BRIDGE CONSTRUCTION COSTS
($000's)

Item	Recommended Lines Line "B"	Line "D"	Line "A"	Line "C"	Line "E"	Line "F"
Total Structural Length (feet)	7.8	7.5	15.9	11.7	14.4	7.0
Medium and Minor Span Approaches	2,900.0	2,600.0	9,400.0	5,700.0	9,000.0	2,000.0
Long Span Approaches and Main Span	8,900.0	11,500.0	8,300.0	4,800.0	8,000.0	10,400.0
TOTAL	11,800.0	14,100.0	17,700.0	10,500.0	17,000.0	12,400.0
Engineering and Contingencies	1,800.0	2,100.0	2,600.0	1,600.0	2,600.0	1,900.0
TOTAL CONSTRUCTION COSTS	13,600.0	16,200.0	20,300.0	12,100.0	19,600.0	14,300.0

Estimated construction cost of toll plazas and customs facilities	$2,000.0
Estimated cost of access roads	$2,000.0
Estimated maintenance and operating costs in 1970*	
Operation of toll facilities	$ 150.0 per year
Snow removal	100.0 per year
Structural maintenance and inspection	250.0 per year
Total O & M costs	$ 500.0 per year

*The Report suggests a possible increase in operation and maintenance costs of about five per cent a year.

PROPOSED BRIDGE ALIGNMENTS



In addition to the above, it appears that there is very little reason to change those figures presented as to the financing capabilities of the proposed bridge. That is, that substantial financing will be required from the senior levels of government - federal, provincial or state governments. Even under the most favourable conditions of high tolls, fees and heavy traffic flows, there will still be great difficulty in attracting more than about 20 million dollars or about two-thirds of the basic cost of the project.*

Presently the costs of the ferry service between Wolfe Island and Kingston City are underwritten by the Ontario Department of Highways. The cost during 1964 - 1968 is shown below. It should be noted that the capital cost of the present ferries is omitted; this is due to the fact that these capital costs are sunk or committed costs and cannot now be avoided.

It has been suggested that these costs should be deducted from the cost of the proposed bridge; however, upon careful examination it can be seen that the costs of maintenance of the proposed bridge are approximately $50,000 greater than the cost of operating the Wolfe Island-Kingston ferry service. Therefore, it is our opinion that no adjustments need be made to the cost of the proposed bridge to compensate for those costs of operating the ferry service.

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* During the course of this survey, there has been comment concerning an offer by a New York bond dealer to support a 15 million dollar series A bond issue for construction of the bridge. Caution should be exercised in considering this money freely available to construct the bridge as (1) the balance of the construction cost must then of necessity be supported by governmental assistance, (2) the offer indicates only that the bond market has evaluated the bridge capable of supporting a commercial issue of only 15 million dollars.

ALTERNATIVE METHODS OF SERVICE

In addition to the above, we have undertaken a brief study of alternative methods of servicing the potential demand for transportation facilities to Wolfe Island. The most feasible alternative to the construction of the proposed bridge was that of constructing and operating a 30-car capacity ice-breaking ferry. The construction costs would be approximately $1,000,000 and operating costs would approximate $370,000 per year. (This would include the operation of the Wolfe Islander.)

There would be some savings realized in eliminating the need for the ice-breaking tug which is now costing $80,000 - $90,000 per year.

A new and larger vessel would not be able to dock at the hamlet of Wolfe Island because of the deeper draft. Dawson Point would probably become the permanent dock rather than being used only in the winter months as is now the case.

Further improvement in operation could be made by changing from a side-loading operation, as presently exists, to an end-loading type ferry which means that the motor vehicles would not need to be turned on board. This would facilitate loading and unloading. New docks would have to be built to accommodate end-loading vessels. A rough estimate of $500,000 may be required for new docks.

A capital investment of one to $1.5 million would provide an annual saving of $70,000 - $80,000 and would provide a 50 per cent

increase in vehicle capacity during peak periods. This proposition would improve the service to Wolfe Island and would eliminate many of the lineups that presently exist in the summer months. It is highly probable that a reduction in waiting time would increase the volume of tourist and day park visitors should a park be constructed. The improved service may well increase the attraction of cottages on the island as opposed to other areas within the county, particularly because of its proximity to Kingston.

The justification for this improved service could be found in the above and also in the improvement of the access island residents would have to social services such as hospitals, schools, libraries, Queen's University, and various cultural and social services. With proper promotional activity and suitable facilities on Wolfe Island, both summer and winter, the ferry itself could be a suitable attraction.

COST - WOLFE ISLAND FERRY SERVICE

WOLFE ISLANDER FERRY	1964-65	1965-66	1966-67	1967-68
Salaries	$ 46,503	$124,300	$154,591	
Operating Costs	11,104	17,825	20,183	
Repairs	4,000	112,490	27,843	
Sub-total	61,607	254,615	202,617	$236,535.44
UPPER CANADA FERRY				
Salaries		4,970	86,088	
Operating Costs		2,661	7,919	
Repairs		7,984	14,555	
Sub-total		15,615	108,562	$103,863.89
Total Cost of Ferries	61,607	270,230	311,179	$340,399.33
ICEBREAKING TUG RENTAL	99,275	97,262	77,705	$ 88,432.00
Total Cost of Ferries and Tug	$160,882	$367,492	$388,884	$428,831.33
DAWSON POINT DOCK				
Construction of Dock and Road	89,539	33,917		
Cost of Property	8,826			
Repairs and Reconstruction				
Concrete Wall etc.	———	———	102,891	
Total Cost Dawson Point Dock	98,365	33,917	102,891	
Total Yearly Cost	$259,247	$401,409	$491,775	

SUMMARY AND CONCLUSIONS

Purpose

The feasibility study for an international crossing on the St. Lawrence River by DeLeuw Cather suggested that the proposed crossing would not be financially feasible and would therefore require senior government assistance in order to secure financing and meet its debt repayment requirements. The essence of the DeLeuw Cather report was that the proposed bridge would not generate sufficient traffic to meet its costs under any acceptable toll structure.

This survey was undertaken to determine whether there are sufficient economic benefits arising from the construction of the proposed bridge to more than offset the shortage in revenue generation and therefore make the project economically feasible. The economic benefits identified would consist of those benefits that were not captured in the toll structure but rather accrue to the community at large.

Area of Economic Impact

In order to locate such benefits, two regions were identified as being those areas of primary and secondary economic impact. The primary economic impact of the proposed international bridge connecting the City of Kingston, Wolfe Island and Cape Vincent will be largely contained within a small geographical area including the three terminal points of Kingston, Wolfe Island and that portion of Upper State New York west of Highway 81, north of and including the City of Watertown. A second and larger area includes an eight-county region with boundaries on the eastern Frontenac County line, Highway 7 and the western

boundary of Durham County. This secondary area also includes Jefferson and Lewis Counties in Upperstate New York.

Major Influences

It is suggested that because of the overriding influence of the Kingston urban centre and the close proximity of the Thousand Islands Bridge, any time and distance savings resulting in lower transportation costs and any induced traffic that can be attributed to the construction of the bridge will emanate from this narrow area. This is the region where both time and distance reductions over present levels of service would be significant enough to alter mobility patterns and affect economic activity. The larger area is that region where any secondary effects of increased economic activity in the local area are likely to be manifested. The area of primary economic impact generates 70 per cent of the southbound trips and 60 per cent of the northbound trips. A major portion of new trips generated will be local trips to and from Wolfe Island with a lesser amount of induced trips generated to and from the U.S.A. and Canadian hinterlands.

Sector Analysis

The survey examined four of the prime areas of economic activity within eastern Ontario:

Housing and Residential Development
Industrial Development
Agricultural Development
Tourism and Recreation

This was done to determine whether the proposed bridge would contribute to the output or efficiency of each of these sectors. In a great many areas our conclusions are similar to those of earlier reports and, in general, it was found that the proposed bridge would produce few benefits in most sectors. It is clear that Wolfe Island and the City of Kingston would be the main beneficiaries of the limited benefits. It is also true that a major portion of these benefits would not be additions to the total economy but only transfers from other localities.

An examination of the above economic sectors showed that Kingston and eastern Ontario in general lagged behind the province as a whole in both the level of economic prosperity and in rates of growth. It is our conclusion, however, that the construction of the proposed international bridge would not add significantly to the economic growth of this area.

Housing and Residential Development

Within the housing and residential development sector it was found that construction of residential properties on Wolfe Island would be of a high cost nature, due to the requirement of duplicating essential community services already found on the mainland. Given the present development in Upper New York State and the fact that Kingston is the major centre of influence in the region, the political and economic restrictions arising from the existence of an international border will lessen the possibility

of a major housing development on the New York State mainland. Furthermore, the Kingston urban area today, with its present level of basic services, can support an increased population of 20,000 - 30,000 persons. This built-in provision for growth will meet anticipated requirements until at least 1985.

Agriculture

The agricultural sector of Eastern Ontario's economy is undergoing pronounced structural changes. The counties within the study area are largely unsuitable for intensive cultivation and the area is characterized by the production of livestock and dairy products. The major farm inputs and the markets for farm production are found locally or east of the region - in Ottawa, Montreal and Quebec. Very little farm production is marketed in the U.S.A. and shipments that do occur are not of sufficient length of haul as to be dependent or influenced by the proposed bridge. As a result, there will be few, if any, economic benefits accruing to the agricultural sector from the construction of the proposed bridge. The economy of Upperstate New York parallels almost exactly that of southeastern Ontario. If anything, the adjoining mainland exhibits a more depressed condition than southeastern Ontario. Jefferson and Lewis Counties have shown little, if any, growth and consist mainly of marginal farms producing dairy products and some livestock. Upperstate New York provides Kingston with neither a market for, nor a supply of, agricultural products.

Industrial Sector

The major trade patterns in eastern Ontario flow east and west between the major market areas of Montreal, Toronto and Ottawa. The industrial sector in Kingston and eastern Ontario has exhibited a slow growth pattern. Our examination has shown that new industrial activity in eastern Ontario has tended to locate close to the Quebec-Ontario border and thus close to the major metropolitan markets of Ottawa and Montreal. Cornwall has attracted almost 40 per cent of all new industry in eastern Ontario. In addition, it is evident that the existence of a nearby bridge facility is not a sufficient catalyst for industrial expansion. This is clearly exhibited by examining the economic growth of other bridge centres such as Brockville, Morrisburg and Prescott.

The Kingston urban area possesses a number of differences from its neighbouring cities in eastern Ontario. Kingston is an institutional city with a large military establishment in Pittsburgh Township, a number of public institutions such as hospitals, prisons, universities and other educational facilities. While other eastern cities have a labour force of approximately 40 per cent in manufacturing, Kingston's labour force shows only 22 per cent in this classification. Public administration and health and welfare absorb over 29 per cent of Kingston's labour force compared with 13 per cent in Cornwall.

The effect of an international bridge on a local community is, in no small measure, determined by the facilities that the local community can make available to surrounding areas or regions now made accessible.

With the exception of tourism and possibly universities, the facilities that Kingston can supply to areas of New York State adjacent to the proposed bridge are severely limited. The major portion of public services, such as health, welfare and education, are restricted by political jurisdictions and cannot serve the residents of New York State. Shopping and trade facilities are equally unlikely as potential traffic generators since these trips are restricted by customs regulations and duties. Therefore, it would appear that Kingston urban area would not present a major attraction to the residents of Upperstate New York.

Tourism

It has been suggested that substantial benefits to the tourist sector could be expected from the construction of the proposed bridge. It is our contention that the additional benefits to be derived in this sector will be largely local in impact - Wolfe Island and the City of Kingston - since the outlying areas are now well served by the existing Thousand Islands Bridge. In addition, a major portion of these local benefits will not be added economic activity, but simply transfers from one area to another.

Other studies of the tourist industry confirm our conclusions. Generally, tourists from the U.S.A. tend to utilize commercial resorts and camping facilities. Of all guests at commercial resorts in Ontario, according to a 1964 study by the Department of Highways, 46 per cent were U.S.A. residents and nearly 25 per cent of all campers using Provincial parks were U.S. residents.

According to the same survey, campers and guests at commercial resorts are not sensitive to time delays or distance factors. Modest time distance improvements of twenty minutes or thirty miles do not induce significant increases in tourist traffic. The study concluded that "major road improvements do not materially affect recreational travel patterns".

The distribution of U.S. owned cottages in eastern Ontario is more likely to be influenced by the recreational quality of the land than by the existence of an additional international bridge. The quality of the tourist attraction is far more important than the marginal improvement in access facilities.

The above, however, is not the case when considering purely local tourist activities such as local resident cottages, day visitors to local parks and local use of commercial marina facilities. In these cases, facilities are being utilized by community residents and any undue delay or difficulty in gaining access may substantially prevent expanded use.

General Conclusions

Our analysis of the potential distribution of benefits and improved mobility patterns created by the proposed bridge shows that these benefits are highly concentrated locally on Wolfe Island and in the Kingston urban area. These benefits are not large enough to justify the expenditure in the range of $35 million on the proposed bridge. In addition the bridge must support an annual operating cost of $500,000. The bridge will have very little effect on most economic sectors - with the possible exception of tourism and recreation.

Even in the latter case, the benefits are not large, as was shown in the 1966 study of Canadian Urban Economics Ltd. on the potential of Wolfe Island. In view of the above, the Interdepartmental Task Force does not recommend the construction of the proposed bridge at the present time.

Alternatives to the Proposed Bridge

The benefits accruing to the local community from improved mobility patterns to and from Wolfe Island appear to justify upgrading the present ferry service comprising two side-loading vessels during summer months and one during off-peak seasons. An improved ferry service can be justified on the basis of increased local tourist activity and improved access for the residents of Wolfe Island to social and cultural services such as hospitals, libraries, and universities. In addition, some spill-over to both Kingston and Wolfe Island will occur as a result of improved economic communications between the Island and the mainland.

Subject to budgetary provision and the allocation priorities of overall government spending, it is recommended that a new, and larger, end-loading all-weather ferry be put into service between Wolfe Island and the Kingston mainland. The operating costs of such a service would be equal to, or less than, the operating and maintenance costs of the proposed bridge structure and the capital investment would be approximately $1.5 million - or $90,000 in capital charges per year over the twenty-year life of the vessel.

HE/377/.C2/.K56/1969
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